

ANNUAL REPORT

OF THE

PUBLIC HEALTH

OF THE

NEWTON ABBOT RURAL

NEWTON ABBOT URBAN

AND

DAWLISH URBAN

SANITARY DISTRICTS.

FOR 1909.

BY

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COMPARATIVE TABLE.

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PLACES. 1909	Birth-rate	Annual death-rate per 1,000 of population									Deaths under one year to every 1000 births
		Total Death-rate	From Seven Zymotics	Small-pox	Measles	Whooping Cough	Scarlatina	Diphtheria	Continued Fever, &c. Typhoid, &c.	Diarrhoea	
England & Wales	25·6	14·5	·80	·00	·21	·16	·06	·14	·06	·17	98
Newton Abbot Rural	20·7	15·3	·79	...	·11	·16	...	·26	·11	·16	105
Newton Abbot Urban	21·8	13·1	·51	...	...	...	...	...	...	·51	97
Dawlish Urban.....	18·7	16·0	2·2	...	...	1·5	...	·25	...	·50	107

* less 219 towns.

Deaths in Public Institutions

Districts	Institutions	Local Distribution of Mortality							
		Newton Urban	Newton Rural	Dawlish	Torquay	Teignmouth	Ashburton	Visitors	Total
Newton Rural	Moreton Cottage Hospital		3						3
	Torquay Isolation Hospital				4				4
Newton Urban	Union House	11	15	4	35	5	2		72
	Hospital	17	3						20
	Isolation Hospital		5					1	6
Dawlish Urban	Cottage Hospital			5					5
Totals	...	28	26	9	39	5	2	1	110

RAINFALL IN 1909.

I give below statistics for 14 stations in the 3 districts. As compared with the previous year they all show a considerable increase, varying from 2.20 inches at Leusden, to 14.21 at Manaton, with a mean of 7.98. The least rainfall was recorded, as usual, on the coast, that at Dawlish being the only one which totalled less than 30 inches; while Leusden (57.10), and Manaton (50.99), registered the most. In relation to the mean rainfall of previous years, out of 9 stations in which comparison is possible, one (Blackingstone) shewed an increase of 10.65—about one fourth, while six others recorded advances varying from .62 at Ideford to 2.45 at Highweek. On the other hand, at Moreton Rectory and Trusham the figures were rather below the average. On the whole, the rainfall was somewhat more than normal, and for this the months of March, October, and December were largely responsible. The summer generally was cold and wet, February and November being the driest periods. Water supplies generally were well maintained, and I had no complaints of shortage during the year.

Another station has this year been established at Bovey.

RAINFALL IN INCHES.

STATIONS.	Height in feet above sea level	January	February	March	April	May	June	July	August	September	October	November	December	Total 1909.	1908	Average
Broadhempston, School...	135	2.01	.60	6.42	2.20	1.08	4.48	2.63	2.61	1.65	8.17	1.02	7.21	40.08	34.14	—
Cockington, Edginswell	100	1.82	.55	6.62	2.38	.91	4.23	2.63	2.16	1.37	8.53	1.55	7.27	40.02	—	—
Dawlish East, Lawn	18	1.59	.47	5.04	1.91	1.25	3.89	2.13	1.66	1.68	5.67	.73	5.30	31.35	23.24	30.53
Dawlish West, Vicarage	60	1.52	.54	4.90	1.48	1.45	3.45	1.96	1.64	1.91	4.99	.59	4.46	28.89	21.99	28.06
Haldon, Thorns	550	2.33	.64	5.26	2.04	.50	4.63	2.43	2.76	1.63	4.70	2.30	6.20	35.42	27.55	—
Hennock, Mardon	810	2.01	.68	8.26	2.87	1.37	3.60	2.41	1.76	1.88	8.39	1.34	7.34	41.91	32.39	40.68
Highweek, Newton Abbot	250	2.04	.48	6.42	2.36	1.30	3.73	2.18	1.87	1.29	7.97	.98	6.06	36.68	29.17	34.23
Ideford, Rectory	300	1.50	.50	7.10	2.06	1.28	3.46	2.26	1.76	1.78	6.12	.68	5.67	34.17	27.37	33.55
Kingskerswell, South Hill	270	1.41	.36	6.01	2.05	.86	4.08	2.07	1.86	1.07	6.45	.96	5.96	33.14	26.10	31.80
Leusden, School	900	3.33	.85	8.77	4.33	2.30	3.50	4.08	2.55	2.36	11.31	2.33	10.39	57.10	54.90	—
Manaton, School	900	2.67	1.02	7.73	2.75	1.78	5.01	2.56	2.06	1.86	11.52	2.11	9.92	50.99	36.78	—
Moreton, Blackingstone	1090	2.02	.58	8.30	2.81	1.04	4.17	2.33	1.87	1.90	8.54	1.46	7.80	42.82	33.63	32.17
Moreton, Rectory	600	2.44	.74	8.17	2.55	1.30	3.86	1.66	1.68	1.58	7.09	1.51	7.01	39.59	31.15	40.79
Trusham, Rectory	320	1.50	.52	7.54	2.49	1.31	4.88	2.27	1.44	2.70	6.48	.78	4.42	36.33	26.25	36.41

The averages in the last column are for 7 years at Dawlish East; 8 at Highweek and Moreton Rectory; 10 at Dawlish West; 13 at Blackingstone; 14 at Kingskerswell; 22 at Ideford and Trusham; and 32 at Hennock.

I am indebted for the above figures to the Revs. C. F. Benthall (West Dawlish); O. H. Cary (Trusham); S. Dewey (Moreton Rectory); and G. J. Ford (Ideford); Messrs. J. Bancroft (Leusden); H. Langford Brown (Cockington); S. C. Chapman, Water Engineer to the Torquay Corporation (Blackingstone and Mardon); S. F. Churchward, Surveyor (Dawlish East, and the Thorns); E. A. Foster (Kingskerswell); F. H. Jones (Manaton); C. C. Mole (Broadhempston).

ANNUAL REPORTS

1909.

1.—NEWTON ABBOT RURAL.

PHYSICAL CHARACTERS.—The district presents two distinct features. The central portion is occupied by a low-lying area of irregular shape, being 8-9 miles by 2-3 in its greatest dimensions, and drained by the River Teign and its tributaries. This was formerly the site of a lake belonging to the miocene geological period; and the soil is composed of beds of clay, quartzose sand—the washings from the surrounding hills—and lignite, which have at one point been ascertained to attain a depth of over 500 feet. The working of this clay constitutes a special source of trade and wealth in the neighbourhood. This level area is bounded by hills of red breccia or sandstone (on the coast), green sand, shales and limestone; to the westward by the igneous bosses of Dartmoor, which rise from the valley to an elevation of 1,560 feet at Rippon Tor, and culminate on the margin of the district in the mass of Hameldown, 1,750 feet above sea level. These constitute uplands, which, with their wooded slopes, pure moor breezes, and abundance of water, are altogether faultless as far as natural endowments go. Thus the varieties of climate are well marked—the warm and sheltered coombes, luxuriant in foliage, which run down to the sea, or the Teign valley—as at Bishopsteignton, Coombe, or Lustleigh—are at one end of the scale; whereas at the other lie Moretonhampstead, Manaton, and Ipplepen, on uplands of considerable elevation, and with lower barometric pressure.

OCCUPATION.—Dairy farming and agriculture constitute the chief means of livelihood in large portions of the district, which is within easy access of several populous urban communities; this includes market gardening, especially in the parish of West Dawlish. The clay workings in the Teign valley, from which the raw material is shipped to all parts of the world, are also an important industry; potteries are established at

Kingsteignton, Heathfield, Bovey Tracey, and Aller, and the trade affords occupation in the aggregate for several hundred workers, who live in the adjacent towns and villages.

Quarries for building and road making stone are numerous, chiefly limestone, granite, and diabase; the latter is in much demand for roads, the principal quarries being in the neighbourhood of Trusham, where over 100 men are now employed. Of late years there has been some revival of the tin and copper mining., especially at Vitifer, near Widecombe, and micaceous iron is found in the vicinity of Lustleigh; this is, however, not very considerable at present.

No special diseases have come under notice as the result of these occupations.

The northern and moorland parts, as well as the coast line, being attractive in situation and scenery, are residential to some extent; hence lodging and boarding houses and hotels are numerous and increasing.

The district has an acreage of 99,142, and a population at the census of 1901 of 18,902; it includes 28 parishes, varying in density from those containing the small towns of Bovey, Chudleigh, Kingsteignton, and Moretonhampstead, to the purely rural and thinly inhabited areas of Manaton, Widecombe, and Woodland. At the time of the above census there were 4,229 occupied houses, with an average of 4.5 persons per houses; since then, however, plans for 504 new houses have been passed, mostly in parishes, which, like Bovey, Moreton, and Kingsteignton, being urban in character, have an increasing artisan population; while, though in a somewhat lesser degree, localities attractive to visitors, such as Lustleigh, and the neighbourhood of Haytor, shew considerable development. There has been no change in the constitution of the district during the past seven years, and for the purpose of calculating the various rates given in the accompanying tables, I have left the census figures unchanged.

VITAL STATISTICS.—The number of deaths actually occurring in the district was 266, but to these must be added 15 from the Union House, 5 from the Isolation Hospital, and 3 from the Hospital, all these being in the Newton Urban District; also 4 which took place in the Exminster County Asylum; while 4 occurring in the Torquay Sanatorium in persons belonging to that town are deducted. This gives a nett total of 289, of whom 147 were males and 142 females, resulting in

an annual death rate of 15.3 per 1,000. This is a fraction above the average for the preceding ten years (14.7), and rather more than two points in excess of the low figure attained in 1908.

Deaths in public institutions are again somewhat above the average; I give on page 2 a table shewing the institutions in the three districts, and the local distribution of the mortality they afforded. The highest mortality was registered in the first and second quarters of the year, while February, with 37 deaths, April (32) and November (31), were the most fatal months. On the other hand September (12), and August (16), shewed the lowest death rate. Eighty-three deaths were recorded in the first quarter, 81 in the second, 49 in the third, and 76 in the fourth, giving rates per 1,000 per annum of 17.6, 17.1, 10.1, and 16.1 respectively.

CHIEF CAUSES OF FATALITY.

7 chief zymotic diseases	...	15	deaths
Erysipelas	...	1	„
Malaria	...	1	„
Other septic diseases	...	3	„
Influenza	...	10	„
Constitutional diseases	...	49	„ (22 cancer; 15 phthisis)
Diseases of the nervous system	...	32	„ (16 apoplexy)
„ „ respiratory	„	48	„
„ „ circulatory	„	37	„
„ „ urinary	„	7	„
„ „ digestive	„	8	„
Alcoholism	...	1	„
Infantile debility	...	5	„
„ malformation	...	4	„
„ neglect	...	1	„
Premature birth	...	12	„
Natural Causes	...	1	„
Old age	...	44	„
Violence	...	10	„ (6 accident; 4 suicide)

AGE INCIDENCE.

Under the age of 1 year	there were	41	deaths.
Between 1 and 5 years	„ „	8	„
„ 5 and 15	„ „	9	„
„ 15 and 25	„ „	9	„
„ 25 and 65	„ „	80	„
Over 65 years	„ „	142	„

Thus 14.2 per cent. of the total deaths were under 1 year of age, and 49.1 per cent. over 65 years. The first of these figures is hardly so favourable as that of the preceding year, while the latter shews a considerable improvement, these being 12.2 and 40.6 respectively. The average age at death was 52.2 years, as compared with 49.6 in 1908, and 51.9 in 1907.

The infantile mortality, or number of deaths under 1 year to 1,000 births, was 105, a rebound from the low returns of the three previous years, but still only slightly above the mean of 101.

The causes of infantile mortality were:—Whooping cough, 2 deaths; diarrhœa, 1; septic diseases, 1; constitutional diseases, 2 (1 tubercular); diseases of the nervous system, 2; of the respiratory system, 7; of the circulatory system, 1; of the digestive system, 2; debility, 5; malformation, 3; neglect, 1; accident, 2; and premature birth, 12. Thus the latter cause was again responsible for nearly one-third of the total deaths, while debility and respiratory diseases together made up nearly half the remainder.

The births of 192 boys and 200 girls give an annual rate of 20.7 per 1,000; this is a fraction in advance of the two previous years, but is still slightly below the mean of the 10 years, 1899-1908. One hundred and seven births were registered during the first quarter, 116 in the second, 78 in the third, and 91 in the fourth, giving rates per 1,000 per annum of 22.6, 24.6, 16.5, and 19.3 respectively.

The natural increase of population, or excess of births over deaths, reckoning the mortality in the public institutions, was 103, or 5.5 per 1,000, as compared with 137 in 1908, and 118 in 1907.

The zymotic death rate worked out at .79—considerably below that of 1908, in which both measles and whooping cough played a considerable part—and was accounted for by 5 fatalities from diphtheria, 3 each from diarrhœa and whooping cough, and 2 from both measles and typhoid fever. Two of the diarrhœal deaths, however, took place in the County Asylum in elderly persons (both over 60 years of age), and were certified as being due to dysentery. If these are excluded, the rate is reduced to .69.

In comparison with previous years, the chief features comprise a slight rise in the death rate, and also in the infantile mortality. The former, however, is somewhat discounted by the larger proportion of senile deaths

COMPARATIVE TABLE—SUB-REGISTRATION DISTRICTS.

SUB-REGISTRATION DISTRICTS.	BIRTHS.		DEATHS.							MORTALITY FROM SUBJOINING CAUSES.																			
	Registered.	Birth-rate per 1,000.	At all ages.	Death-rate per 1,000.	Under 1 year.	Between 1 & 5 years.	Over 65 years.	Under 1 Year to every 1000 births	Belong- ing to district.		Seven Ordinary Zymotics.											Phtthisis.	Other Tubercu- lar Diseases.	Bronchitis, Pleu- risy, Pneumonia.	Heart Disease.	Cancer.	Violence.	All other Diseases.	Average age at death.
									In Union House.	In County Asylum.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	Diarrhoea.	Cont'd Fevers &c.	Total Zymotic deaths.	Zymotic death rate per 1,000.										
Newton Rural ...	93	21.0	65	14.7	14	1	27	151	5	2	...	...	...	...	...	2	2	4	.90	2	3	8	2	4	33	47.8	
Chudleigh ...	117	20.7	82	14.5	11	3	41	94	4	2	...	...	...	...	...	1	...	6	1.1	3	2	10	9	2	35	51.3	
Ashburton Rural ...	58	23.6	49	19.9	7	1	27	121	2	...	...	...	...	...	...	...	...	1	.41	3	1	5	2	1	27	52.3	
Moretonhampst'ad ...	59	22.2	37	13.9	5	2	20	85	...	...	...	...	...	...	...	...	...	1	.37	3	...	6	5	1	16	53.0	
Sea-border ...	65	17.5	56	15.1	4	1	27	62	4	...	...	...	...	...	...	...	...	3	.81	4	1	6	4	2	29	57.7	
TOTALS, 1909	392	20.7	289	15.3	41	8	142	105	15	4	...	2	...	5	3	3	2	15	.79	15	7	35	22	10	140	52.2			
Average for 10 yrs } 1899-1908.	416	21.4	286	14.7	42	18	121	101	17	...	...	5	...	2	4	2.5	2.5	16	.82	19	7	40	36	21	11	136	50.8
	383	20.3	246	13.0	30	23	100	78	20	2	...	10	...	3	9	...	...	22	1.2	15	6	31	28	18	10	116	49.6
	375	19.8	257	13.6	27	17	118	72	17	6	...	6	...	2	...	2	2	12	.63	18	4	43	31	23	17	109	51.9		
	428	22.6	272	14.4	29	8	120	68	17	3	...	2	1	3	2	4	2	14	.74	16	6	33	38	26	12	127	51.2		
	422	22.3	294	15.5	39	14	130	92	25	4	...	6	...	...	3	3	3	15	.79	22	10	34	39	26	7	141	50.5
1904.	412	21.8	285	15.1	50	21	119	121	17	...	...	3	...	...	11	2	1	17	.90	23	6	35	38	22	7	137	...

(nearly 50 per cent. in the year under review), and the consequently high mean age at death. For many years past death rates have been gradually diminishing, in response to sanitary advance in various directions; but it is obvious that this is a process which cannot be indefinitely continued, seeing that all persons born must eventually die, unless the duration of life is capable of progressive expansion. It would seem, therefore, that the mean age at death is also an increasingly important factor in the comparison of vital statistics with those of previous years. Some fallacies are, of course, involved when any given district is compared with others; and rural localities contain a certain number of elderly persons who have retired hither to spend their last days; while, on the other hand, many of the young and vigorous gravitate towards urban communities, tending to diminish the death rate of the latter at the expense of the former. But, on the other hand, when the duration of life in any given district shows a consistent increase, it is surely of favourable import. The causes may be that a greater number of persons reach an advanced age, or that there are fewer premature deaths; so that to arrive at any real conclusion, the percentage of mortality at the various age periods—especially those under 5 and those over 65—the extremes of life, should be taken into consideration.

In this district, there are several vigorous, though small, centres of urban character, and industries which attract men in the prime of life, so that all age periods are fairly well represented. I have for the past five years calculated the mean age of the deaths for the district, and in 1909 have added the figures for the sub-registration districts for purposes of comparison; these are, perhaps, at present too small to draw any special inferences from, but it will be seen that the Sea-border, which is practically only agricultural and residential, shows by far the highest, which is to be expected. I propose to extend this comparison to the separate parishes in the future, and after a series of years, to compensate in some degree for the small population, some statistics of interest should result.

The zymotic rate, though not in itself excessive, suffered from the presence of diphtheria in several parishes, while the only two cases of typhoid fever indigenous to the district unfortunately terminated fatally.

There is little to be said about the birth rate; this has been almost stationary for several years past, and at present shows no sign of change in either direction.

Under other chief headings, deaths from the tubercular group (22), are practically the same as those of the previous year (21), and are well below the mean of 26. Cancer on the other hand, has slightly advanced, and deaths from this cause (22) are equal to the combined figures for phthisis and "others tubercular." Respiratory diseases were responsible for 14 more deaths—an increase of nearly one-third, notwithstanding the very slight incidence of measles and whooping cough; the wet and cold summer may, however, have had some influence in this connection. Heart diseases, though just below the average, have also contributed to the increased mortality as compared with 1908, while deaths from violence remain at about the normal number.

Turning in more detail to the sub-registration districts, **Moretonhampstead** occupies, on the whole, the best position. The general death rate of 13.9 was easily the lowest, though slightly in excess of 1908, and the same may be said of the zymotic rate (only one death, and that from measles), while the infantile mortality was all but the best. The percentage of deaths under 1 year was 13.5, and of those over 65, 54. The birth rate was also second, together with the mean age at death. In all these respects, therefore, the figures compared favourably with those for the whole district. Phthisis, however, contributed 3 deaths—or rather more than 1 per 1,000, while 5 or nearly 2 per 1,000 were due to cancer.

While the death rate of **Chudleigh** was somewhat below the combined figure, and occupied the second place, the zymotic rate was the highest, chiefly owing to four fatalities from diphtheria, which was prevalent in three parishes during the latter part of the year. There was also a death from measles, and another from diarrhoea, this latter, however, not being indigenous. The infantile mortality was below the mean, and was fairly satisfactory, the proportion of infant deaths being 13.4, and of senile, 50 per cent. The birth rate, though coinciding with that for the whole district, was all but the lowest, while the same position was accorded to the average age at death. Five deaths from the tubercular group were registered—rather under 1 per 1,000, while the cancer rate worked out at 1.6.

Newton Rural shewed a general death rate slightly higher than that of Chudleigh, though more than 1 point better in comparison with 1908, together with a somewhat lower zymotic rate, the latter being due to 2 deaths from typhoid fever, and the same number from diarrhœa; one of these took place, however, in the County Asylum. The infantile mortality was somewhat large, and the proportion of these deaths was over 20 per cent.; nevertheless the percentage of senile mortality was over 40. The mean age at death was only 47.8—the lowest in the district. The birth rate of 21.0 took, as in the previous year, a medium position. Tubercular diseases (3 from phthisis) produced a rate of rather over 1 per 1,000, while on the other hand, only 2 deaths from cancer were recorded. Violence was responsible for 4 fatalities, nearly half of the total for the district.

The figures for the **Sea Border** shew considerable contrast. On the one hand the general death rate, though a small fraction below the average, was all but the highest of the sub-districts. On the other, very favourable returns in respect to the infant mortality—far the lowest—and the zymotic rate, which was entirely due to 3 deaths from whooping cough—were presented, while the percentage of infant deaths was only 7.1; those over 65 worked out at 48.2, both good results. The average age at death (57.7) was also a very satisfactory feature. Phthisis was responsible for 4 fatalities, and “others tubercular” for 1 more, giving a rate of 1.3 per 1,000, while cancer with 4 deaths shewed rather less.

The birth rate was only 17.5—much the lowest, and 3 points below that for the whole district. It was, moreover, nearly the same figure in the preceding year.

Ashburton Rural had the highest general death rate, rather more than 4 points in excess of the combined figure; on the other hand the birth rate was in very much the same position. The zymotic rate—due to a single death from diphtheria, was only .41—a good figure. The infantile mortality, again, was all but the highest, though considerably less than in 1908, and these deaths worked out at 14.3 per cent. of the total. The senile mortality was, however, large, and reached 55 per cent., while the mean age at death was almost coincident with that for the district. Four deaths resulted from tubercular disease, giving a rate of 1.6 per 1,000, while cancer, with 2 fatalities, only gave a rate of .8. The mortality from respiratory diseases was somewhat high, in comparison with 1908.

Death Rates, &c., in each Parish.

PARISHES.	Census 1901.		Ordinary Zymotics.								Influenza.	Phthisis.	Other Tubercular Diseases.	Cancer.	Apoplexy.	Infantile Inanition.	Violence.	Belonging to parishes		Total deaths.	Death Rates.	
	Population.	Average.	Small Pox.	Scarlatina.	Diphtheria.	Whooping Cough.	Measles.	Continued Fevers.	Diarrhoea.	Union House								County Asylum	1909.		Average for yrs. 1899-1908.	
Abbotskersell	457	1486	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	4	8.8	13.4
Bickington.....	215	1403	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	7	32.6	16.5
Bishopsteignton	1076	4449	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	12.1	14.0
Bovey Tracey	2694	7567	..	..	1	..	1	..	1	..	..	..	..	4	1	..	..	3	35	13.0	11.8
Broadhempston	445	2200	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	11	24.7	21.7
Buckland	87	1493	..	..	..	..	..	..	..	..	..	2	..	4	1	2	..	..	32	nil	7.1
Chudleigh	1820	6128	..	..	3	..	..	..	..	..	..	..	..	1	1	..	..	..	4	17.6	17.4
Cockington.....	265	1451	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	15.1	15.6
Coffi'swell & D'cm'be	201	1152	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	10.0	13.5
Coombe & Hacombe	358	2004	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	14.0	10.4
Dawlish (West)	678	3870	..	..	..	..	..	..	..	1	2	1	1	2	1	1	..	..	17	25.1	10.8
Denbury & Torbrian	448	3002	..	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	7	15.6	13.8
Hennock	711	3299	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	10	14.1	13.2
Ideford	254	1440	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	3	11.8	10.4
Ilsington	886	7813	..	..	1	..	..	..	..	..	1	2	..	1	1	..	..	..	17	19.2	13.6
Ipplepen	789	2887	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	10	12.7	14.2
Kingskerswell	1027	1797	..	..	..	..	..	..	..	1	1	1	1	3	1	1	..	..	12	11.7	14.6
Kingsteignton	1942	3975	..	..	..	..	..	2	2	..	..	1	1	..	3	1	..	..	33	17.0	18.4
Lustleigh	400	2978	..	..	..	..	..	..	2	..	..	..	1	2	..	..	..	..	4	10.0	11.9
Manaton	315	6422	..	..	..	..	1	..	..	..	1	2	..	1	2	3	1	..	8	25.4	12.9
Moretonhampstead	1541	7910	..	..	..	..	..	..	..	..	..	2	..	2	1	1	..	..	21	13.6	18.4
North Bovey.....	398	5589	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	4	10.1	8.7
Ogwell	250	2089	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	3	12.0	16.1
Stoke.....	463	2167	..	..	..	3	..	..	..	..	..	1	..	..	..	1	1	..	8	17.3	14.3
Teigngrace	190	1496	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	3	15.8	8.1
Trusham	165	625	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	12.1	17.0
Widcombe	657	10786	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	6	9.1	14.1
Woodland	170	1634	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	8	47.1	7.5
Total	18902	99142	..	..	5	3	2	2	3	10	15	7	22	16	5	10	15	4	289	15.3	14.7

On page 12 I give the usual parish table, with deaths from the more important diseases and death rates for each parish, both for the year under review and the averages for the preceding 10 years; this latter is a better guide in communities where the figures are small, and, therefore, liable to considerable fluctuations. Only one parish—that of Buckland—was without mortality. Death rates below 10 per 1,000 were registered at Abbotskerswell (8.8), and Widecombe (9.1). Next in order came Coffinswell and Dacombe (10.0), Lustleigh (10.0), North Bovey (10.1), Kingskerswell (11.7), Ideford (11.8), Ogwell (12.0), Bishopsteignton (12.1), Trusham (12.1), Ipplepen (12.7), Bovey Tracey (13.0), Moretonhampstead (13.6), Coombe and Haccombe (14.0), Hennock (14.1), and Cockington (15.1). All the above are below the rate for the whole district. The highest mortality was shewn by Broadhempston (24.7), Dawlish West (25.1), Manaton (25.4), Bickington (32.6), and Woodland (47.1). In all but the first of these, however, the decennial average is very much lower, and in the case of Woodland, only about one seventh.

Of those containing over 1,000 inhabitants, Kingskerswell, second in 1908, occupies the best position, closely followed by Bishopsteignton; Bovey Tracey and Moreton—the latter with a much improved figure—being not far behind. The other two have rates which exceed the combined result.

ZYMOTIC DISEASE.—To the seven ordinary zymotic diseases, 15 deaths were assigned, as compared with 22 in 1908, and 12 in 1907, viz., 5 diphtheria, 3 whooping cough, 3 diarrhoea, 2 typhoid fever, and 2 measles, giving an annual rate of .79. The decennial average was .82.

The notifications were 138 in number, as compared with 50 in 1908, and 44 in 1907. This is a large increase, entirely due to scarlatina and diphtheria, both of which diseases were prevalent in certain parishes. The number was made up of 75 diphtheria, of which 19 were in Newton Rural, 46 in Chudleigh, 9 in Ashburton Rural, and 1 in Moreton; 53 scarlatina, 11 being in Newton Rural, 3 in Chudleigh, 12 in Ashburton, 21 in Moreton, and 6 in Sea Border; 4 typhoid fever, equally divided between Newton Rural and Chudleigh, and 6 erysipelas, of which Chudleigh was credited with 3, while Newton Rural, Ashburton, and Sea Border had one each. Thus no district had a clean record, but Sea Border alone was free from diphtheria.

The following table shews the monthly incidence : —

DISEASE.	January	February	March	April	May	June	July	August	September	October	November	December	Total.
Small Pox	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlatina	—	—	7	1	6	4	—	4	—	12	8	11	53
Diphtheria	14	4	3	2	1	5	4	1	6	7	16	12	75
Typhoid Fever	—	—	—	—	—	1	1	—	2	—	—	—	4
Erysipelas	—	1	1	1	—	—	—	—	—	1	1	1	6
Puerperal Fev'r	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	14	5	11	4	7	10	5	5	8	20	25	24	138

MEASLES.—The greater part of the district was entirely free from this disease during the past year, but one or two of the northern parishes were affected during the early spring months, chiefly Lustleigh and Manaton. There were also a few cases at Brookfield, in the parish of Bovey; the children from this village attend the Lustleigh school. There were in all only 2 fatalities, one at Manaton and one at Bovey.

WHOOPING COUGH was prevalent in the small village of Coffinswell in the beginning of the year, while a little later an outbreak occurred at Stoke, resulting in three deaths. Ilsington was also affected during the summer months, but without fatality. As in the case of measles, most of the district had a clean record.

SCARLATINA was responsible for 53 notifications, as compared with 11 in 1908, and 12 in 1907, and in two parishes was epidemic in character. Of these the most serious was at Moretonhampstead, during the latter months of the year. The first cases were notified early in October, and enquiry at the neighbouring houses elicited some evidence that other children had been similarly affected several weeks previously; examination of these, however, produced no result. From this time a dropping fire of cases occurred; 8 being recorded in October, 6 in November, and 6 in December. In this town there are three schools, the girls and infants, though separate departments, being under one roof, while the boys have a separate building, in another street. The first three cases were among the girls, but examination of a number of children in this school was negative;

two of them had, however, home associations. Then the disease appeared in the boys' school, to which the next two belonged, and though examination of contacts and one of the classes did not reveal any likely source of infection, I found, on visiting some absentees at their homes, a boy peeling profusely, with history of earlier symptoms of disease. This cottage was, however, in the country, a mile distant, and the boy had not attended school for some weeks, so that this did not seem a very probable source; a young adult in the adjoining cottage was nevertheless attacked. Altogether the schools did not seem to have much influence in spreading the disease, but I examined the children in affected classes on several occasions, and also the whole infant school when two cases occurred there. There were in all 4 cases in the girls, 6 in the boys, and 2 in the infants. Four were not attending school, but in three of them I found distinct history of association with previous patients. One attended a private school; in only two instances were there multiple cases in the same house. Two adults were attacked; the others were all young children. As the outbreak seemed somewhat persistent, the country children, who amount to a considerable number, about one-third of the whole, were, by my advice, excluded after the Christmas holiday, and immediately on re-opening I examined the whole of the children, and found two (one of the boys and one of the girls, who were brother and sister) peeling. Visits to absentees resulted also in three others being found with somewhat suspicious symptoms, so with the concurrence of the County M.O.H. the schools were closed for a month. Very early in the outbreak the schools were thoroughly scrubbed out with disinfectant, all woodwork, desks, benches, floors, and dados, receiving attention, and this was repeated during the holiday. These premises are scrubbed out once a month as a routine practice. As Moreton is not in the Hospital combination, removal was not possible, and home isolation in most instances was imperfect; also there is no means for disinfecting bedding and clothing other than those which can be effected by the Sanitary Inspector.

At Broadhempston a limited outbreak occurred in the summer months, though the attacks were separated by considerable intervals, three being notified in May, three in June, and two in August; two in the parish of Woodland attending the Broadhempston school were

reported in this month. I examined all the school children early in June, but without result. The schools were, however, disinfected on my recommendation during the summer holiday. In three instances two children in the same house were attacked, while the others were singleton cases. This parish, like Moreton, is not in the Isolation Hospital combination, and, therefore, all were isolated as well as possible at home, and steam disinfection for bedding is not available.

Kingsteignton was responsible for four cases, all in one family, and it is remarkable that two of these children at least had been at school for a week or more in a peeling condition, before the disease was discovered, and yet no spread resulted. All these were removed to the Newton Hospital.

Another family was in like manner affected at Teigngrace, and on enquiry at the school I found another child peeling, with, however, hardly any history of previous symptoms. Four of these were treated in hospital, while the last was isolated at home. This incident took place in the middle of October, and though no further attacks resulted at the time, during the Christmas holidays 5 others in three families were affected—all children attending this school, though I was in the village of Preston (Kingsteignton parish), and the other 4 in an outlying part of the Newton Urban District. These were all removed to hospital. This school was disinfected during the holiday, therefore, and an examination of the children made by myself immediately on re-opening, without, however, any further case being discovered; one other was reported in November.

Besides the above, isolated attacks were reported at Aller (Abbotskerswell), 3 in one family, in March; at Woodland (April); Kingskerswell, 2 (May); Westwoods, W. Dawlish (May); Bovey (November); Brookfield, Lustleigh, 2, in one family (November); and Abbotskerswell, 2 in one family (December).

Of the above 53 cases, 12 were between the ages of 1 and 5 years, 37 between 5 and 15 years, 3 between 18 and 25 years, and 1 over the latter age. Fifteen were treated in the Newton Hospital, while the West Dawlish patient was removed to the Exeter Sanatorium. There were no fatalities, and nearly all the attacks were of the mild type which occurs in this part of the country.

DIPHTHERIA.—75 notifications, as compared with 30 in 1908, and 22 in 1907. This disease affected in more or less degree all the sub-districts, except the Sea Border, which was entirely free, but the parishes which suffered most were Chudleigh, Kingsteignton, Bovey Tracey, and Ilsington. The most serious incident during the year was an obstinate outbreak at Chudleigh, which occurred during the last quarter. There were, however, two cases early in June, one in the town and another in a cottage about a mile distant. In the former household a younger brother was found to be infective on bacteriological examination, but in the other the rest of the children (6 in number) were free; there was some history of association between the two. The patients were removed to hospital, and the incident, though a second country case in a child attending the Council School occurred early in July, was apparently closed. About the middle of September, however, four children in a house in Mill Lane were practically simultaneously affected, one (a girl of 4) being a nasal case. Enquiries at the school (National) and bacteriological examination of contacts discovered another, a boy who was in the same class as one of the above. Some suspicion was attached to the fact that the head teacher and his wife had returned from their holiday with sore throats about three weeks previously; swabs taken were negative, but on my advice he did not attend for a fortnight. Two other children in this school were attacked about the same time, but one was next door to an infected house, and further bacteriological examination of contacts and others led to no result. The woodwork (floors, desks, etc.), were on my advice thoroughly scrubbed with disinfectant; the desks were wiped over daily as a routine practice. Early in October there were three further cases in children attending the National School, and the managers decided to close for a month, with my approval. Another disinfection of floors, desks, etc., was then carried out, and the walls re-colored, at my suggestion; this seemed for a time to check the progress of disease, and during the month there was only one fresh attack, and this at the Council School. A little later two other children from this school were infected, but though not in the same class, there was a history of association. Up to this point the disease had been very mild and convalescence rapid, but a more severe type now manifested itself, and early in November three fatal attacks in young children occurred. Swabs were taken

from several children in the Council School, and I examined the whole of the infant class, and sent up several swabs; one contact was thus discovered. In the meantime the disease re-appeared at the National Schools, and as the schools seemed to further the spread of the epidemic, both were closed at the end of November by my advice, and with the concurrence of the County M.O.H. till after the Christmas holidays. From this time to the end of the year, three more cases were notified in different parts of the town, and without any association, as far as could be ascertained. Nearly all the attacks were in school children, but three adults were affected (a visitor and two servants) in the Y.M.C.A. house; about 60 girls came here from time to time, and infection probably originated in this way. None of the country children attending the schools were, as far as I could discover, attacked, but cases arose in two neighbouring parishes. In one instance the child affected had not been into any house in the town, and in the other a shop only was visited, and I was told that no other children were on the premises at the time; it would appear, therefore, that infection was contracted in the streets.

In Chudleigh itself there were in all during the year 25 cases, while two contacts were discovered by bacteriological investigation. Three ended fatally; several others were severe, but the majority only slight. Of these 22 were removed to hospital, the other three being efficiently isolated at home. All the usual precautions were taken, and bedding and clothing sent to Newton for steam disinfection; the gullies in the streets and courts were disinfected.

Kingsteignton was responsible for 17 cases; 15 of these were reported during the first three months of the year. One distinct group was connected with the hamlet of Sandygate, about a mile distant from the town; a child living here had been attacked in the December of the previous year, and in the first week in January two children at Bellamarsh (near Chudleigh Knighton, and attending that school), who had visited the house were infected; about three weeks later three others contracted the disease. I examined the throats of all the Sandygate children (about 25), and sent up four swabs, which were all negative; there was moreover no further spread in this hamlet. The remaining cases were spread over the months, January—March. The schools did not appear to have much influence, two being notified towards the end of the holiday, and a third was below the school

age; another attack was the second in that house. Of those actually attending school, four (2 in one family) were from the British, and two from the National Schools. Late in the year, a girl came home from service outside the district, with post-diphtheritic symptoms, but bacteriological examination was negative, though there was a history of sore throat some fortnight previously; there was also another isolated case (adult) in October. All the above, except two, were children, and though two or three of the attacks were severe, there were no fatalities. Thirteen were removed to hospital, the others being isolated at home. There were multiple cases in three houses, simultaneously in two, but with several weeks interval in the third, after return from hospital of previously affected children; swabs taken both at the hospital and by myself at home were negative.

At Ilsington there were seven attacks; two of these (early in January) were at Haytor Buildings in a previously infected house; both were of severe nature, and one was fatal. Here the isolation was apparently good, and neither of the children had come in contact with nurse or patient.

The other five were in a family living in one of three isolated cottages about half a mile from Ilsington village, and the incident illustrates very well the possible behaviour of the disease. The house itself, with two small bedrooms opening into one another, contained parents and five children, ages 8—12, and the first to be attacked was a girl 10 years old; as far as I could ascertain there was no association with the infected children at Haytor. As this parish is outside the Isolation Hospital area, removal to hospital was not permissible, though eminently desirable under the circumstances. The next alternative was to get rid of the healthy children, but there were no empty cottages in the neighbourhood, and to send children who were in close contact with disease to Ilsington or any other village might have established another centre of infection. All in the house therefore, were given a prophylactic injection of anti-toxin, and a bedroom obtained next door for three girls, who had, however, to go home for meals; a boy slept downstairs. On May 15th—a month later—another son, who lived in service a short distance away, contracted the disease, having been home against my advice; on June 15th, after another month's interval, two of the girls were infected, and had also to be accommodated at home in a space already far too small; the remaining

healthy ones (a girl and a boy) were again injected, but on July 10th the other girl took the disease. One boy alone escaped entirely, though bacteriological examination shewed that at one time he was infective, which, considering the now crowded condition of the house, is not surprising; the parents and this child were given another 2,000 units each of antitoxin as a prophylactic. In the meantime the first patient had developed an obstinate nasal discharge—a condition which in itself is an indication for hospital treatment. This persisted for several months, swabs taken being invariably positive, and towards the end of September, she was, on my recommendation, sent to the Exeter Sanatorium for treatment, where she remained till the end of October. During this time several bacteriological examinations of the other children were made, with varying results, but it was not till the end of December that I was able to obtain two successive negative swabs from all (throat and nose twice each), and two of them had some ear trouble late in the year. The house was limewashed throughout in October, but steam disinfection was not available for the bedding. Had the first case been promptly removed, it is probable that recovery would have been earlier, and also the rest would have escaped; though none of them were severe—especially the later ones, who had had previous injections of antitoxin; still the house remained a possible centre of infection, and all these children have now been absent from school for nine months, to their detriment. The Newton Hospital is only distant six or seven miles from the village, and there was at the time plenty of accommodation.

Another incident at Trusham also illustrated the necessity of hospital isolation being available for this disease. In one of a pair of luckily isolated cottages, nearly a mile from the village, a girl in a family of seven children contracted the disease about the middle of November. The healthy children were accommodated in the next cottage, but isolation was imperfect, and a few days later two others sickened. All were given antitoxin, and the others were apparently free for some weeks; on January 8th of this year (or two months later) another case arose, though I have ascertained by bacteriological examination that six children were free from infection (including 2 swabs each taken from the convalescents). This notification reached me the same day that the swab (taken two days before) was returned as positive, though except for a

slight cold there were at the time of my visit no clinical symptoms. The mother in the interval had been confined, but luckily escaped any complications. I had the whole house sprayed with disinfectant before her illness, but there was no means of disinfecting bedding.

These experiences at Ilsington and Trusham show how subtle the infection of this disease is, and also illustrates incidentally that a protective injection of antitoxin is only of short duration, though in each case the subsequent attacks were mild.

Further interest is attached to a case at an isolated pair of cottages near Lustleigh, two miles from the village, which occurred early in January. Neither at this time nor since were there any other affected children in the neighbourhood, and the Lustleigh School has been long free from the disease. In 1898, there was a limited outbreak in the village, and among others, a child in the adjoining cottage was attacked. Eight years later (1906) a second case occurred in the dwelling recently invaded, without apparent source of infection; the house was then limewashed throughout, and shortly after the tenants left. Some dampness of walls, owing to submergence at the back, was remedied at the time, and a new earth closet provided at a little distance; the water supply (from a spring) was improved. Notwithstanding all this, newcomers are infected: the only suspicion I could gather, was that fowls, if allowed access to a certain adjoining meadow, suffered, it was stated, from gapes, but at the time of my visit the poultry were healthy.

Bovey also suffered somewhat in this connection. Isolated cases were reported in January, June, and July (2), the latter being in young adults, with no apparent history of association: at the beginning of November two young children below the school age, one in the town and one in a country hamlet, were attacked. Bacteriological examination of contacts shewed that a sister in one case and children in a neighbouring cottage in another, were infective, and this directed attention to the National Schools, which all these attended. I found, on enquiry that there had been two or three sore throats among the children sometime previously, but swabs from these and also from contacts were negative. No more cases occurred till Christmas, when four children in a country farm were simultaneously attacked; here another child, attending the same school had, it was stated, a sore throat about 14 days before, and was probably the source of infection, but

examination was negative; these were all severe, and in one instance fatal. The mother contracted the disease a week later, and a schoolmate of one of the children was also infected. Up to the end of the year there were in all 10 cases, 8 of which were treated in hospital. The schools were disinfected during the Christmas holidays.

In addition to the above, disconnected attacks occurred at Teigngrace (2, in isolated but adjacent cottages) Bishopsteignton, the Boys' Brigade Camp at Reddaford Water, Bovey (in August), Chudleigh Knighton, the latter being possibly connected with the Chudleigh outbreak, and Bickington (2 in one family).

Of the total 75 cases, five resulted fatally, giving a case of mortality of 6.7 per cent.. Forty-six were removed to hospital (45 to Newton and 1 to Exeter). There were 10 instances of multiple attacks in the same house, 7 of which were simultaneous, while in the others a greater or less interval supervened.

Sanitary defects were associated in very few instances; where drainage was not known to be recent, tests were made. The milk supply was various, and never came under suspicion. All cases were visited by myself immediately on notification, and where advisable removal to hospital carried out forthwith, in parishes belonging to the combination; in others the healthy children were, if possible, removed; infected houses were visited at intervals subsequently. Antitoxin was supplied free of charge, and bacteriological examinations are now undertaken by the County Council. Bedding and clothing is steam disinfected (in 14 parishes only), and disinfection of the premises carried out by the Sanitary Inspector. I take this opportunity of acknowledging the ready and ungrudging assistance rendered me by Drs. Walters and Huxtable, the medical men at Chudleigh and Bovey respectively, who took many swabs and visited infected houses.

The causes which favour the spread of this disease are not even now fully understood, but it seems probable that infection is most commonly conveyed in the throats of persons who are apparently healthy or so slightly ailing, that any symptoms they may have pass unnoticed. In the presence of infection there are several factors which exert influence, but the most important is the vital resistance of the individual to the special germ with which diphtheria is associated; with this must be coupled the condition of the throat and nasal passages—the most

usual seat of disease. In this connection three classes of persons, roughly speaking, may be mentioned:—

- (i.) Those in whose tissues the bacillus will not live at all, and is rapidly destroyed.
- (ii.) Not quite so vigorous; and the germ exists for a longer or shorter period in the throat, but without producing any clinical symptoms.
- (iii.) Of still less resisting power, resulting in an illness varying in intensity from slight sore throat to an extensive membrane, accompanied by severe constitutional disturbance.

Anything, therefore, which lowers the general state of health, such as unsanitary surroundings (including dampness of the dwelling), want of proper rest, especially if accompanied by enlarged tonsils or other abnormal condition of the throat, will act as a predisposing cause, and also tend to increase the severity of an attack.

It is considered by many that climatic conditions constitute another factor, but I have not observed any particular behaviour of the disease in different seasons of the year, or under varying changes of temperature or rainfall; they are, in my opinion, only to be considered of importance in so far as the general health of any given individual is affected by them.

Since the introduction of the antitoxin treatment, it is comparatively rare for the membrane itself to cause death by mechanical obstruction of the windpipe, but it is mainly owing to the poisons (toxins) which the bacillus generates that danger is due; these, by action on the nerve centres, produce various forms of paralysis, serious in proportion to their effect on the heart's action; they may also act as a direct poison on the kidneys.

I have had under observation many cases which were purely nasal, and as far as could be ascertained without any throat symptoms at all; however considerable the discharges from the nasal passages were, in none of these was there any constitutional disturbance; at the most such patients were somewhat anæmic. Why constitutional poison should be produced or absorbed when the local seat of disease lies in the throat, but not in the nose, is not easily explained.

Diphtheria has of late years undergone a considerable change, both in its behaviour and severity, but it must be remembered that bacteriological examination now discloses many cases—both throat and nasal—which would formerly have escaped notice altogether. In this district during the ten years, 1899-1908, 112

attacks were reported, 21 of which were fatal, giving a case mortality of 18.7 per cent.; in 1909, out of 75 attacks, only 5 resulted fatally, or a mortality of 6.7 per cent. Not only are fatal cases fewer in proportion, but those so definite that bacteriological examination for purposes of diagnosis was unnecessary, have been generally of milder type, and constitutional disturbance less severe. Whether this is due to the effect of the antitoxin treatment generally on the disease, or to the natural evolution of the bacillus, is hard to say. These are favourable indications, but on the other hand, the infectivity of the disease seems to be much more pronounced. It will, of course, be understood that where nearly all attacks are severe, people are more alarmed, and precautionary measures rigidly and promptly adhered to, whereas many are now so slight that patients and friends cannot understand the necessity of undergoing the inconveniences entailed; moreover the fact that the apparently healthy may yet be a medium of infection is hardly realised at all. Another adverse feature is the uncertain duration of infection; this year in one family repeated bacteriological examinations shewed the existence of the bacillus in the throat and nose of four children for several months; whether in a virulent condition or not cannot be said. These were no doubt exceptional cases, but it is comparatively common for several weeks to elapse before the patient can safely mix with others. This, again, is hard for the layman to understand, when the child is in health perfectly well. Altogether it seems certain that, in spite of the far greater facilities for diagnosis afforded by bacteriology and the consequent isolation of a greater proportion of those affected, the disease spreads much more readily than formerly was the case.

Unlike most other zymotics which are common in this country, one attack does not protect the patient indefinitely. I have had at least one instance of a child being infected two years in succession (diagnosis confirmed by swabs on each occasion)—that is to say the natural antitoxins produced by the patient have only a temporary influence; and it would seem to follow that those artificially introduced will behave in much the same way. More than one illustration of this has been afforded during the past year, and in these instances the protective power of the injection lasted apparently only three or four weeks.

Nevertheless diphtheria is mainly a disease of childhood, and adults, especially if healthy, are all but

immune; the same applies to many other zymotics, but it is open to argument that a mild and unnoticed attack of scarlatina, whooping cough, or mumps, may have produced that effect.

The preventative measures to be taken present some little difficulty, especially in a rural district where considerable distances are involved. It is, of course, most desirable to remove a patient to hospital from a household crowded with children, but the disposal of "contacts," who though highly infective, shew no clinical symptoms—or at the most very slightly congested throats—is not so easy. It certainly is not, in my opinion, advisable to put them in a ward with others severely affected, even if sufficient beds were available, and therefore, unless the great expense of a special block for such cases be incurred, they must perforce be isolated as well as possible at home. This has to be done with the knowledge that disease may be passed on to another with more serious results, while the patient and his friends are incredulous that any such danger exists; the new conditions evidently require new measures to meet them, and the public have as yet hardly grasped the position.

The effect of school attendance is another matter for discussion. Children are here brought together in close association indoors, and not only are "contacts" and those slightly affected thus made more dangerous, but in acute cases infection is present before the clinical symptoms appear. I have, in more than one case, taken swabs (returned as infective) from children who seemed perfectly healthy at the time, but a few days later developed pronounced symptoms of the disease. One has to decide whether to advise closure on the first three or four cases appearing, or to keep open and thereby collect the children for examination. In Rural districts the former is in my opinion the best course to adopt, because it is practically impossible to keep a watch on absentees, or even to visit distant schools as often as this procedure renders necessary. The middle course of excluding the country children has the advantage of keeping them at least out of the way of danger, and also incidentally of giving those remaining more air space, and enabling each child to be kept at a distance from its neighbour. I have found on several occasions that closure for a week for a thorough disinfection of the premises has put a stop to a threatened outbreak, and this would seem to imply that

infection lingers about the building itself; it did not, however, succeed at Chudleigh last autumn.

I always impress on teachers the necessity of keeping pens and pencils separate for each child, if not possibilities of infection are increased; the children, too, should be taught not to put these in their mouths at any time.

The County Council now pays for all swabs taken either by myself or other medical men, and this has been of great service. I have taken personally over 200 during the past year in the district, and the local doctors have sent up others; but at a distance from the laboratory time is necessarily sacrificed, and two days elapses before the result is known; two negative swabs taken on different days are obtained from each patient isolated at home (as from hospital cases) before disinfection is carried out and their school attendance is prohibited for three weeks from the following Monday. I am of opinion that children in the same house should have swabs taken before they return to school, and this will in future be carried out as far as possible.

Scarlatina in this district has become so mild that if it were not for the possible sequela of kidney trouble, it would rank in importance with mumps or chicken pox, and it remains to be seen whether diphtheria will ultimately develop in the same direction; at all events it seems to shew this tendency. In the meantime the best preventative for this, as well as other infectious diseases, lies in the improvement of the general health of the children. Better feeding has long been in operation; housing is also changing, though more slowly, in the right direction; and medical inspection will lead the way to treatment of the local throat abnormalities which favour the growth of the germ. The removal of adenoid growths and the excision of enlarged and unhealthy tonsils is a simple operation, and when parents receive a notice from the school medical officer that attention is necessary their own medical man should at once be consulted. Treatment of these conditions means not only less susceptibility to infection, but also improvement of the general health of the child at the most important period of life.

TYPHOID FEVER.—As in 1908 there were only 4 cases reported, but two of these originated outside the district; in one instance a young adult was sent home on account of her illness, and the other was a visitor. Both of these were at Chudleigh at the time, and were removed to hospital. The other two (and only indigenous attacks) were at Kingsteignton; one was associated

with faulty drainage and chokage caused by a hidden intercepting trap, while the second presented no very obvious cause. Unfortunately both these resulted fatally, one in hospital, and one at home. The rest of the district was entirely free from this disease.

The patient who recovered was 16 years of age, while the others were over 30—a period of life when a fatal result is far more probable.

PUERPERAL FEVER.—No cases were reported during the past year.

ERYSIPELAS.—Six notifications; one was between the ages of 15 and 25, four between 25 and 65, and one over the latter age. There was one fatality.

ISOLATION HOSPITAL ACCOMMODATION. Fourteen Rural Parishes, with a population of 12,228, within a general radius of six miles from Newton Abbot, are in combination with that town with regard to the Hospital. The typhoid wards give accommodation for four adults on the basis of rather more than 2,000 cubic feet each, while the new diphtheria block, divided into four wards, contains 6 beds (2,400 cubic feet apiece), besides cots. The iron building is now used exclusively for scarlatina, and contains 8 beds on about the same basis.

The northern and more distant parishes are still unprovided for in this respect, as well as some of those nearer at hand; in the early part of the year a resolution was passed by a majority of the Council to include all those within a reasonable distance, but owing to the opposition of the parishes concerned, this again fell through.

The experience of the past year has strengthened my conviction that the hospital should be available in all cases suitable for removal; all parishes within a 6—8 miles radius would derive the full benefit of the institution, and should, in my opinion, be included in the combination, while the others might have the option of sending in patients on payment of a weekly charge. Several of the more distant towns and villages are separated from Newton by hilly roads, at considerable elevation, but mild scarlatinal and diphtheritic attacks—so prone to spread infection—would very well undergo the journey, as mentioned in a former report; one nasal diphtheritic case had eventually to be sent to Exeter for treatment—a distance of 20 miles—while the Newton Hospital is only about 7.

Besides this, these outside parishes have no provision for the steam infection of bedding—the only effectual method.

For Dawlish West, the Exeter Sanatorium, at a distance of about 9 miles over a practically level road, is the most accessible, and one scarlatina case was sent there on my advice during the past year. The whole matter is one which is now ripe for settlement.

All notifications are visited by myself immediately on receipt; where feasible patients are removed to hospital. In other cases, I endeavour to get the house cleared of healthy children, who are either taken by relatives or boarded out in houses only tenanted by adults. Where this is not practicable—especially in isolated country cottages, where sending away contacts might mean the starting point of another centre of infection, isolation has to be carried out at home as well as possible, but this is generally unsatisfactory in cottages. In one or two instances nurses have been provided by the Guardians or Sanitary Authority.

Houses are disinfected with the formalin lamp or sprayed, and there is a steam apparatus at the hospital for dealing with clothes and bedding, this latter being available only for the parishes within the combination.

Disinfectants are supplied gratis, and can be obtained at the following places:—Abbotskerswell, Mr. R. Chudleigh; Bishopsteignton, Mr. R. Berry; Bovey Tracey, Mr. E. Steer; Broadhempston, Mr. W. Atwell; Brookfield, Mr. W. Parker; Chudleigh, Mr. J. Kelly; Chudleigh Knighton, Mr. Cornish; Cockington, Mr. W. Dyer; Dawlish West, Mr. C. Coombes; Denbury, Mr. L. Lark; Ideford, Mr. W. Bowden; Ipplepen, Mr. A. Luscombe; Kingskerswell, Mr. E. S. Ford; Kingsteignton, Messrs. T. Lang and J. T. Partridge; Lustleigh, Mr. E. Arnold; Moretonhampstead, Mr. L. Endacott; Ogwell, Mr. W. Webber; Stoke, Mr. Jas. Knott; and Widecombe, Mr. A. Nosworthy.

Antitoxin for diphtheria treatment is supplied by the Authority, and is kept at my Office at 13, Union Street, Newton Abbot; also at the Cottage Hospital at Moretonhampstead.

PHTHISIS was responsible for 15 deaths, as in the previous year, of which 2 were between the ages of 5 and 15 years; 3 between 15 and 25 years; and 10 between 25 and 65 years. This gives a rate of .8 per 1,000, as compared with a decennial average of 1.0. Chudleigh, Dawlish West, Ilsington, and Moreton were each credited with

two fatalities (in the instance of Chudleigh both took place in the Union House), while several others contributed a single death. Disinfection is subsequently carried out by the Sanitary Inspector.

Seven deaths were attributed to other tubercular diseases.

- Notification of phthisis by the Poor Law Medical Officers has resulted in 13 cases being reported, with the following local distribution:—Bickington, 2; Bovey Tracey, 1; Broadhempston, 1; Combe, 1; Kingskerswell, 1; Kingsteignton, 4; and Stoke, 3. Of these two have greatly improved, while three have been fatal. Their ages ranged from 2 to 67 years. Two were under four years of age (brother and sister); in both the illness began with whooping cough, and they had been nursed at the breast by the mother, who had a bad family history. Two others were school children (age 11), and in one case the existence of disease was discovered by the school inspector; seven were young adults, while the remaining two were elderly persons (49 and 67 years), in whom the affection was chronic, and more or less stationary. In seven instances, other members of the family had previously been affected with consumption; the three patients at Stoke were all closely related.

Occupations included four farm labourers—who have to undergo considerable exposure to damp and cold—and three domestic servants. Influenza was stated to be the starting point in two cases.

I visited all the above, and left a printed card of simple directions, though I found that their own medical attendant had generally given full instructions; spitting flasks are provided by the authority, and much appreciated. In six instances separate bedrooms were possible, but in cottages—often with only two bedrooms—this is often impracticable. I have re-visited most of them when in the neighbourhood.

Disinfectant is supplied free of charge by the Authority, and rooms are disinfected after death or removal.

DAIRIES, COWSHEDS, AND MILKSHOPS.—There are now on the register 197 dairymen and cow-keepers, controlling about 1,800 head of cattle. The majority of these are small; 110 milking from 1—10 cows, 63 from 10—20, 18 from 20—30, and only two from 30—40. The largest are those which send in milk to Torquay, Newton Abbot, and Teignmouth. There are only three dairies which get their milk altogether from

outside. The Model Regulations of the Dairies, Cowsheds, and Milkshops Order are in force, and copies printed on stout cards have been distributed, to be hung up in a conspicuous place. Water supplies are various; of the total 197, 99 get their supply from the public mains in the various towns and villages; 26 have spring water brought in by gravitation, while 72 depend on wells. I have visited practically all of them during the year, while those which send milk to Torquay are also inspected by the authorities of that town. The paving and ventilation of the shippens are having attention, and in some instances sheds have been concreted during the year, but there are still a great number with rubble stone pitching. It is in this matter that improvement is most needed, because such floors suggest dry sweeping as a means of cleansing rather than washing; the former raises into the air the dust, composed of impurities of many kinds, while the latter allays it. And where milking operations are carried on this is a matter of the greatest importance.

Limewashing is carried out very fairly, as far as walls and stalls are concerned; I have not had many complaints to make, and increasing numbers of cow keepers limewash the ceilings also.

There are no cowsheds in which animals are kept always indoors, but in most farms they are brought in at night for about three months in the year; in some of the more sheltered localities, the cows sleep out all the year round. I have no knowledge of the number of tubercular cattle, but having regard to the open air life they enjoy here, do not consider it to be any considerable amount; there is no means, however, of ascertaining this point. The quality of the milk is under the charge of the police, who take samples for analysis from time to time.

The dairies are kept very clean, generally speaking.

OFFENSIVE TRADES.—Urban powers are in force over the whole district in respect to these, (Public Health Act, 1875, Sections 112—114), and no offensive trade may be established without the consent of the authority; the Local Government Model Bye-laws applying to such trades are in force. There are only two businesses in the district which come under this heading; I have found them well looked after as regards cleanliness on my visits, and have had no complaints about either.

SLAUGHTER HOUSES.—There are 34 of these in the district, of which six are in the parish of Kings-

kerswell. They are inspected from time to time by the Sanitary Inspector and myself, and have been generally found satisfactory, though in one or two instances, where surrounded by houses, complaints have been received. Private slaughterhouses in towns are always liable to be a nuisance when slaughtering is going on, and the offal being removed. From the nature of a Rural District, it is only by chance that inspections are made while animals are being killed. The model regulations under the Bye-laws are in force.

HOUSING OF THE WORKING CLASSES.—

Three cottages at Dawlish West were condemned as unfit for habitation during the year, owing to their dangerous condition; two cases of overcrowding have been dealt with.

Building operations are again somewhat slack, Kingsteignton, with 9 new dwellings, shewing the greatest advance. In all, 29 new houses were built, of which 19 were artizans cottages, spread over 11 parishes, while plans for 44 were passed, including one for building 11 cottages in a field at Lustleigh.

The older houses are receiving attention, but many of them are not capable of any great improvement owing to their construction; water is generally good, and in the towns and villages which have a public supply, flushing closets is insisted on. In the more rural parts, dry systems of sewage disposal are the general rule—nearly all have plenty of garden space. As elsewhere, there is plenty of demand for cottages, but modern cottages cannot be built to let at the rent which the agricultural labourer can afford to pay. The extension of the quarry works at Trusham, in particular, where the workmen have to go considerable distances to get any lodgings at all, is overtaking the existing accommodation in that neighbourhood; nothing has as yet been done to supply the deficiency, and it is impossible for such small public bodies as the parishes concerned to move in the matter. I am of opinion that 50 to 100 new cottages anywhere within a reasonable distance would be immediately taken up. Of course, it would be a speculation depending on the life of the industry, but the demand for this stone for various purposes seems large, and to be continually increasing.

HOUSE TO HOUSE INSPECTIONS were carried out at Bovey, Bishopsteignton, West Dawlish, and Ipplepen.

BUILDING BYE-LAWS.—The model regulations of the Local Government Board are in force throughout

the District, and the modifications for Rural Districts recently issued have also been adopted and are in force.

The Public Health Act, 1907, has been considered by the Council, and most of its provisions have been adopted; they are now in operation.

MIDWIFE'S ACT.—There are 12 midwives on the register; nine of these are certificated by training and examination, while the other three are registered by virtue of long practice previously to 1902. They attend (without the doctor) about one quarter of the births in the District. Six are also district or parish nurses, and one is on the staff of the Moreton Cottage Hospital. They live at Bishopsteignton (2), Bovey (2), Broadhempston, Chudleigh (2), Ilsington, Kingsteignton, Moreton, Trus-ham, and Widecombe. I inspect them twice a year, which, in view of the number of confinements they attend—averaging about 10 apiece during the year—I consider sufficient. Their books have been generally well kept; bags and appliances clean. There have been no cases of puerperal fever during the year.

Parish nurses (included in the above list) live at Bovey, Chudleigh, Bishopsteignton, and Kingsteignton, while two are working in the Teign Valley, and cover a wide and thinly populated area.

NOTIFICATION OF BIRTHS ACT.—The necessary complement of this Act is the appointment of Health Visitors to look after the rearing of young children and instruct the mothers—a costly matter in a Rural District. I do not think the infantile mortality is sufficiently high to warrant this expense; the Act has therefore not been adopted.

SALE OF FOODS AND DRUGS ACT is administered by the police.

LEAD.—Many of the water supplies, both public and private, are derived from granitic uplands; these are always soft and often peaty, but nevertheless do not seem in this neighbourhood to have any marked action on lead. In the case of those derived from the Torquay gathering ground at Hennock, the silica they contain forms a protective coat. I have had no instances of illness in which lead poisoning was suspected during the year, but in my opinion where these upland surface waters are concerned long lengths of lead service pipe should be avoided.

SANITARY CONDITIONS AND PROCEDURE.

Abbotskerswell population, 457—acreage 1,486. The public water supply is that of Torquay and Newton, and is derived from the Wolborough Hill reservoir at Newton Abbot, but there is also a small tank at Aller, which serves a few isolated dwellings.

There is one short sewer from the convent hill, which discharges in Mr. Chudleigh's orchard; the extension of the system has been under consideration for some time past, but has not as yet been carried out. This is a matter which requires attention, both to make provision for other parts of the village, and also to prevent nuisance from the brook; from time to time complaints are made on this point.

Both water closets and pail privies are common; many of the former have been flushed, and others await sewerage accommodation.

Shales and limestone form the chief geological features of the locality.

The drainage in connection with one house has been put in order.

Except for five mild cases of scarlatina, limited to two families, the parish was free from infectious disease.

There were only 4 deaths in 1909 (1 each from tubercular disease, infantile debility, and violence); this gives the low rate of 8.8 per 1,000, while the mean for the previous ten years was 13.4.

Bickington population 215—acreage 1,403. Water is somewhat scarce in dry weather, and the higher part of the village, and is almost entirely dependent on wells in the shale, which, together with limestone, form the geological features; there is also an outcrop of diabase, which is quarried for road making purposes. I had no complaints, however as to the scarcity of water in 1909. The rainwater storage for the school closets (reconstructed in 1908) held out very well; this work has effected a great improvement.

There are no sewers, and closets are, as a rule, on the dry system.

Two new houses have been built.

With the exception of two mild diphtheritic attacks (in the same family) late in the year, the parish was free from infectious disease.

Seven deaths were registered (1 each from tubercular disease, apoplexy, and violence); this resulted in the high death rate of 32.6 per 1,000, but the decennial average (16.5) was only half that figure.

Bishopsteignton population 1,076—acreage 4,449. The main part of the water supply is derived from two deep springs under the Haldon greensand; there are two covered reservoirs containing together about 120,000 gallons. There is also a third spring, with small reservoir, but this is inconsiderable. This supply is now supplemented from the Teignmouth mains, which run through the village; the extra quantity needed averaged about 2,000 gallons per day, though the local springs were practically sufficient in the winter months.

SEWERAGE.—Water closets are general; the sewers are all piped, except a portion below the church, where there is, however, a good fall. There is now only one main outfall, which irrigates a field below the vicarage; a few dwellings still of necessity drain into West Town Meadow. The majority of the closets are flushed.

NEW WORK.—The main was extended to the Terrace, a distance of 220 feet, to enable closets to be flushed. The portion of sewer between Delamore and the West Town Meadow outfall was reconstructed. Owing to complaints of sewage reaching the Teignmouth Road, a further extension was made in this direction, comprising in all 550 feet. The drains of three private houses were put in order, and 12 closets flushed, as a result of a partial house to house inspection. One new house was built.

A successful prosecution was instituted against the owner of three cottages in the Triangle for non-compliance with a notice to reconstruct the drainage. The work has since been carried out.

One case of diphtheria was reported early in January; there were no zymotic fatalities during the past year.

LUTON, a village of about 20 houses, in the parish, has a good and abundant water supply piped down from a Haldon spring; there is a reservoir containing about 5,000 gallons.

Closets are on the dry system, and there are no sewers.

The hamlet of **ASHWELL** is also supplied by an excellent spring.

The death rate of the parish worked out at 12.1 per 1,000, second among the larger centres of population; of the total 13 deaths, 2 were due to apoplexy, and 1 to phthisis. The average rate for the preceding 10 years was 14.0, and during this period Bishopsteignton has

three times had the best rate (of those containing over 1,000 inhabitants), while on another occasion it was all but the first.

Bovey Tracey population 2,694—acreage 7,567. The older portion of the town lies on the slope of a considerable hill, with a south-westerly aspect. Of recent years it has extended across the Teign Valley, where the considerable suburb of Brimley has grown up.

Water supply is derived from granitic springs at Yarner, and is of excellent quality; there is a storage reservoir on Trendlebeer Down of 3,000,000 gallons capacity. A constant supply was maintained during the past year. There is also a home reservoir, containing 250,000 gallons, above the church, but this can only be partially filled.

SEWERAGE.—The new system continues in good working order, and practically all the houses in the town are now accommodated. Water closets are general, and the great majority are flushed.

House refuse is removed as required.

NEW WORK.—The National Schools and 11 private houses were connected with the town sewers; the drainage of 12 dwellings was reconstructed or put in order, and 36 closets were provided with flush, the latter being chiefly in St. Mary Street.

Building operations are still somewhat slack, but three new houses were built. Plans for five were passed.

The proposed new school is still in abeyance.

I have continued the house to house inspection during the year, but it is not yet completed; as a result a good deal of work was carried out.

BROOKFIELD AND WREYLAND.—These villages, though in the parish of Bovey, are in every sense more closely connected with Lustleigh; they are supplied with water by a main from the Trendlebeer reservoir. The sewers form part of the Lustleigh system; there are two branches, one of which can be flushed from the river. Water closets are general, and are well flushed.

At **HEATHFIELD**, also in this parish, the long row of cottages (32 in number) is supplied by the Torquay water. Closets are all flushed, and there is a private sewer, with outfall, in an adjacent meadow.

Infectious disease was represented by several cases of diphtheria, with one fatality, most of which occurred late in the year (mentioned in detail on page 21). There were also 3 mild scarlatinal attacks (2 at Brookfield), while measles was responsible for a death in the spring.

The general death rate, though considerably higher than that of 1908, was yet only 13.0, while the average for the preceding ten years was 11.8.

This parish has had excellent figures in this respect for several years past, and it is probable that owing to the increase of population this record is actually better still. Of the 35 deaths in 1909, 4 were due to cancer, and 1 each to diphtheria, measles, diarrhoea, influenza, phthisis, and infantile debility. Three deaths took place in the Union House, and 1 in the County Asylum among former residents.

Broadhempston population 445—acreage 2,200. Water supply is derived from wells, mostly in the shale, which is the geological formation of the neighbourhood. I had no complaints as to shortage during the past year.

There is one main sewer, which runs down through the village; this is nearly all piped, and has an outfall in an orchard.

Water closets are numerous, but in the absence of a public water supply, scarcely any of them are flushed. There are also a few pail privies.

NEW WORK.—A new sewer, 70 feet in length, was laid to accommodate several cottages at Houndshead, the outfall being in an adjacent meadow; this has abolished an old-standing nuisance. Drainage and water improvements have been carried out for three cottages, and a farm, at Beeston.

A limited outbreak of scarlatina occurred during the summer months; there was, however, no fatality, and the parish was otherwise free from infectious disease. Eleven deaths resulted in a rate of 24.7; influenza and phthisis were responsible for one each. The decennial average of 21.7 is also high, but there are a number of aged persons in this village.

Buckland population 87—acreage 1,493. This is a moorland parish, adjoining that of Widecombe; the waters are therefore of the granite type, and are pure and abundant. Closets are on the dry system, and there are no sewers.

There were no deaths in 1909, and the average rate for the preceding 10 years was only 7.1—the lowest of all the parishes.

There were no cases of zymotic disease during the year.

Chudleigh population 1,820—acreage 6,128. The town is situated on the western slope of the Haldon Hills, by which it is protected from the north and east; shales, limestone, and greensand are the chief geological features. The water supply is derived from the Kennel Spring, about 2 miles from the town; this is of the excellent quality, usually yielded by the Haldon greensand or the limestone which underlies it; the normal flow is at the rate of 70,000 gallons a day, and is little subject to seasonal fluctuations; the town is entitled to 40,000 gallons, with the option of taking more if required at the rate of threepence per 1,000 gallons. There is a reservoir containing 70,000 gallons, with a meter, near the source. As the consumption considerably exceeded the free limit, it was proposed that meters should be installed where the water was used for trades, gardens, and purposes other than domestic; this has not been carried out as yet. The discussion which this proposal entailed, has, I think, in itself prevented a certain amount of waste.

SEWERAGE.—Water closets are general, and practically all those in the town are now flushed. The sewers are all piped with the exception of a short piece of the main trunk, just above the outfall: there are two main outfalls, which irrigate meadows, but no settling tanks. The proposed provision of a septic tank at the west outfall is still in abeyance, owing to the difficulty hitherto experienced in negotiating a piece of land for the purpose, but the matter is under consideration.

House refuse is removed twice weekly.

NEW WORK.—A new 3-inch main has been laid from Pottery Lane to Rocklands—a distance of 1,950 feet. The sewer in Silver Street (140 feet) was entirely re-constructed.

Three new houses were built; the drainage in connection with one dwelling was put in order, while 3 closets were flushed.

The drainage at Ranscombe Farm, and 2 adjoining cottages was re-constructed, and a new water supply provided.

There was an outbreak of diphtheria, chiefly among school children, in the last quarter of the year, and both schools were closed for a month before Christmas; the National Schools were also closed for a month in October; three fatalities resulted. A detailed account is given on page 17.

Two cases of typhoid fever were reported in September, but both were contracted outside the district.

Thirty-two deaths were registered, giving a rate of 17.6 per 1,000, which is practically identical with the decennial average. The chief causes of fatality were:—diphtheria, 3 deaths; cancer, 4; phthisis, other tubercular diseases, and violence, 2 each; infantile debility, 1. One death took place in the Union House, and one in the County Asylum among former residents.

Cockington population 265—acreage 1,451. The village of that name is partly supplied by the Torquay water, and partly from a private source belonging to Mr. Mallock. At EDGINSWELL there is a public well of very fair quality, but most of the houses are connected with the Torquay mains.

SHIPHAY COLLATON has one public spring of good quality; the school has been provided with water from this source by Mr. Kitson, delivered by a rotary pump in the playground, and connected with the spring by 2-inch galvanised piping. This has, I think, satisfactorily solved a long standing difficulty.

With the exception of the paving of cow shippens, no sanitary work of importance was carried out during the year.

The parish remained free from infectious disease in 1909.

Four deaths (one each from cancer and apoplexy) give a rate of 15.1 per 1,000—rather below the average for the preceding 10 years, which worked out at 15.6.

Coffinswell and Dacombe population 201—acreage 1,152. There are three public dipping springs—two in the former village, and one in the latter, besides private wells. The water is abundant, and of excellent quality though somewhat hard, which may be expected from the sandstone formation of the locality; the cottages are mostly within a reasonable distance of the water supplies. There are no sewers, and closets are nearly all on the dry system.

No sanitary work of importance was carried out during the year.

Except for an outbreak of whooping cough in the spring, without, however, any fatality, no infectious disease was reported.

Only two deaths were registered, and the general rate was 10.0 per 1,000, as compared with a decennial average of 13.5—both good figures.

Coombe and Haccombe population 358—acreage, 2,004. The water is wholly derived from wells, two public and others private, mostly in shale or sandstone; I had no complaints as to scarcity during the past year.

There are no sewers and few water closets; a certain amount of drainage reaches the brook which flows through the village, but this is only a short distance from tidal waters; it is periodically cleaned out below the road, which is sufficient to prevent any nuisance.

The higher public well at Coombe was cleaned out, enclosed, and a pump provided—a great improvement.

A large cowshippen at Netherton was floored with concrete and drained.

The parish remained free from infectious disease. Five deaths (as in 1908) give an annual rate of 14.0 per 1,000, while the decennial average worked out at only 10.4.

Dawlish West population 678—acreage 3,870. This parish mostly borders on the estuary of the Exe, on a sandstone formation, and the population is broken up into several villages and hamlets. Those on the coast line--COFTON, MIDDLEWOOD, WESTWOODS, and MOUNT PLEASANT—obtain their water from the new public supply, which is derived from springs at Duck Aller, and is thence pumped by an oil engine to a reservoir containing 70,000 gallons, situated on the top of Easdon Hill. From this point the main runs through Cofton, Middlewood, and Westwoods, and thence along the river front to Mount Pleasant. The water is fairly soft, pure, and abundant, and was available during the last six months of the year. At the present time 76 houses have been connected with the mains.

The scattered hamlet of DAWLISH WATER lies more inland; this includes several dairy farms, which send milk into the town of Dawlish. Private wells and a few springs constitute the water supply; I had no complaints of scarcity during the past year.

By the adoption of the Public Health Act of 1907, which is now in force, the building of bungalows on the Warren is legally recognised. Plans have to be sent in, as in the case of permanent buildings. These, partly owing to the expense and difficulty of taking the mains across a mile or more of sandbanks, and partly to the fact that they are only occupied for a short time in the year, are not included in the water scheme; the only alternative is rain water storage, and the Council have

decided that a masonry underground tank, of not less than 1,000 gallons, must be provided for drinking purposes, while if water closets are installed, another cistern of 500 gallons capacity is to be added. The bye-laws as to drainage will be enforced as usual.

The sewers from the ravines at Westwood and Middlewood are discharged into separate tanks in a meadow below; these are cleared out periodically; the Cofton sewer has an outlet into tidal waters. Water closets are general, and many of these are now flushed.

In the rest of the parish closets of cottage property are on the dry system, and there are no sewers.

NEW WORK.—The water main has been extended to the Great Western Railway Station and the golf links, a distance of 500 feet.

One new house was built; the drainage of one dwelling was put in order. Thirty-eight closets have been flushed, mainly in connection with the house to house inspection.

Three cottages were closed, owing to their dangerous condition, at Dawlish Water.

Towards the end of the year I began a house to house inspection, with a view to the general installation of the public water supply, which most of the houses badly needed, with the following results at Westwood and Middlewood. These hamlets occupy two little ravines, running down in a northerly direction to the Cofford Brook; the former contains 15 dwellings (1 unoccupied), and the latter 14. At the time of my visit the population was 111, of whom 73 were adults and 38 children—or 4 persons per house. Two houses contained 6 rooms; three, 5 rooms; five, 4 rooms; seventeen, 3 rooms; and one, 2 rooms—giving just over one person per room, excluding scullery and back kitchen; in only one cottage was there anything like overcrowding; where 10 persons (8 children) occupied a three-roomed house.

All the above have now taken in the water, and all water closets (21) are flushed; there are besides three pail privies. Shutings and spoutings were generally in good order, and roofs were slate 15, thatch 8, tile 4, and galvanised iron 1. The majority have good sized gardens at the back, and on the slopes of the ravines. Of the notices served, the work has mostly been carried out, but a few of the back yards still want attention. I purpose continuing this inspection at Cofton during the present year.

The parish is mainly agricultural (market gardening being an important industry) and residential; the absence of a public water supply—now available—has long been the only obstacle to the development of this attractive locality.

Except for a mild case of scarlatina—treated at the Exeter Sanatorium—the parish was free from infectious disease during the past year.

Seventeen deaths were registered (phthisis, 2; influenza and violence, 1 each), giving a rate of 25.1 per 1,000. This high rate is merely an accident, due to the small population involved, and the average for the previous ten years was only 10.8.

Denbury and Torbryan population 448—acreage 3,002. The water supply is derived from two adjacent springs; there is a small reservoir containing about 10,000 gallons. From this it is distributed to the village by means of standpipes, only one or two houses being directly connected with the main; the private connections are cut off in dry weather. The rectory and two other large houses have independent supplies from adjacent springs. The water held out fairly well during the year.

Water closets are general, but few are flushed, as there is not sufficient water for the purpose.

There are two main sewers, which unite to form a common outfall, discharging into a fissure in the limestone rock, upon which formation the village is mainly situated.

The village of TORBRYAN has a good and abundant water supply from a limestone spring, which is piped down to the houses; closets are on the dry system, and there are no sewers.

The reservoir at Denbury was cleaned out, and new collecting pipes laid.

The parish remained free from infectious disease.

The drainage of one house was put in order.

Several cottages at Torbryan have been renovated, and closets provided.

Seven deaths (2 from cancer and 2 from tubercular disease) give a rate of 15.6 per 1,000, as compared with a decennial average of 13.8.

Hennock population 711—acreage 3,299. The village of that name occupies an isolated position near the Torquay Watershed, at an elevation of about 700 feet above sea level, on a granite formation.

The water supply is mainly derived from a spring in the vicarage gardens, conducted by piping to a shute in the village. The proposed scheme of storing this water in a tank at its source, and thence distributing it by means of standpipes in the village, is still in abeyance, pending the outcome of negotiations with the ecclesiastical authorities.

Several cottages are accommodated by another spring, with a small storage tank, about 200 yards south of the main part of the village.

There is a short sewer in Bell Lane, but privies are general.

CHUDLEIGH KNIGHTON, with a population of about 350, lies in the Teign Valley, part of which is included in the parish. The water is that of Torquay, and there is a reservoir above Dunleigh, which contains about 12,000 gallons. The great majority of the houses have taken in the public supply, and closets, which exist, are practically all flushed; there are also many pail privies.

There is one sewer discharging into a goyal below the village, which is, however, dry in summer.

Frankland Farm was provided with a water supply by piping down a spring; a small masonry reservoir for storage completed the work, which settles a long standing difficulty.

Three cases of diphtheria (2 in one family) were reported late in the year, but without fatality.

Ten deaths (1 each from influenza and apoplexy) give an annual rate of 14.1 per 1,000; the decennial average worked out at 13.2.

Ideford population 254—acreage 1,440. The village lies in a sheltered situation on the western slopes of Haldon, at an elevation of about 300 feet; it has a pure and abundant water supply from a spring on the hills above. There is a high level reservoir, which contains 10,000 gallons; some little trouble arose during the summer owing to faulty ball taps attached to cattle troughs, which wasted the water, and caused a shortage; this is a serious matter, and stringent measures are indicated.

The hamlet of OLCHARD, about a mile distant, depends on wells, some of which are precarious in dry weather; unless the main is extended I do not see any solution of this difficulty.

The drainage of one house was put in order, and two closets provided with flush.

The parish remained free from infectious disease.

Three deaths (1 from cancer) give a rate of 11.8 per 1,000, as compared with a mean of 10.4 for the preceding ten years; both these are excellent figures.

Ilsington population 886—acreage 7,843. This parish has a large area, and contains several villages and hamlets; like that of Hennock, it lies partly on granite uplands and partly on the low lying clay formation of the Teign Valley. The village, which gives its name to the district, is 650 feet above sea level, with about 25 houses, including the vicarage and two farms. The water supply is derived from a stream rising on Haytor Down, which takes an open course, partly through cultivated land and partly by the roadside, of about two miles; this has long been recognized as most unsatisfactory, being open to various surface pollutions, and moreover often scanty in dry weather.

HAYTOR VILLAGE, on the verge of the moor, chiefly depends on a spring piped down from just below the quarry, while there are also a few wells. These supplies are barely adequate, and since this attractive neighbourhood is rapidly developing, better provision is much needed.

PINCHAFORD, a hamlet just below Haytor, with a farm and six cottages, is at some distance from the Ilsington leat, whence drinking water is fetched, while HIGHER BRIMLEY (a farm and 8 cottages) has a roadside well, often dry or nearly so in summer.

In the Teign Valley below lie LIVATON, COLD EAST and HALFORD, scattered over a considerable area; these are all dependent on wells, some fair, others of indifferent quality. There is, however, a well of potable water at Halford, belonging to some charity property, which is used by the neighbouring cottages. The school at Blackpool (about 100 children), with teacher's house, depends on a shallow well in the playground—only 6 feet deep; this has run quite dry in previous summers, but I had no complaints in 1909.

An adjacent slaughterhouse uses an open water course.

The proposed water scheme, which includes all the above villages and hamlets, has not yet been carried out. Legal questions as to the right which the parish possesses over the pot water have been at the root of the delay, but the Council are negotiating an agreement with the lord of the manor to sink for water on Haytor Down, independently of the Ilsington leat. This should be an

effectual solution of the question, and the water so obtained would come from below a bed of sand—a natural filter—thus ensuring a supply of better quality than that drawn from an open stream.

SIGFORD, another hamlet, has an excellent supply brought in by gravitation from a spring, and distributed to the various dwellings, while the village of SOUTH KNIGHTON depends partly on wells and partly on a public spring, with storage in a tank.

MOUNTSLAND, a hamlet on the extreme west of the parish, is supplied by a spring, also piped down.

There is only one short sewer—at Livaton—and most of the closets are of the privy type. There are, however, more water closets at Livaton, but in the absence of a public water supply, these are, as a rule, not flushed.

NEW WORK.—Plans for 4 new houses were passed. The channelling at Ilsington village has been extended 30 feet to the blacksmith's shop; this, with the similar work carried out in 1908, constitutes a great improvement. Besides this 20 feet of new drain for surface and slop water was laid down at the Carpenter's Arms.

During the Christmas holidays the entire drainage system of the Ilsington Schools was remodelled and reconstructed. Five new closets (Shanks) were provided, and water for flushing is taken from the stream and pumped into a storage tank; the drain outfall, with septic tank, is in the orchard below. The insanitary condition of the old trough closets and cesspits close to the school and teacher's house had long been a subject of frequent nuisance and complaint, and the managers decided to act without waiting for the solution of the water difficulty; this is, however, no less required for drinking purposes. The cost of this drainage reconstruction was £85.

Infectious disease was represented by an outbreak of whooping cough in the early summer, without, however, any fatality.

Several case of diphtheria, confined to two houses, were also reported; details on page 19.

Seventeen deaths (diphtheria, 1; cancer, 1; influenza, 1; and phthisis, 2) were registered; this gives a general death rate of 19.2 per 1,000, while the average for the years 1899—1908 worked out at 13.6—a much better figure.

Ipplepen population 789—acreage 2,887. An upland village on a shale and limestone formation. The

water supply is derived from the Paignton Waterworks near Holne, and presents the usual quality of a good moorland water; there is a home reservoir on a hill near the village containing 75,000 gallons, whence it is distributed. This supply has replaced nearly all the old wells which were previously in use.

The sewerage is of modern construction, and is all brought to one outfall in a meadow; water closets are general, and nearly all these are now flushed.

NEW WORK.—200 feet of sewer was laid in Dornafeld Lane, but to accommodate all the cottages at this point a further extension is needed.

I have completed the house to house inspection, begun in the preceding year, with the following results. There are 91 inhabited cottages and small houses, of which 82 are roofed with slate and 9 with thatch. Sewers are available for all but 9, which are on the outskirts—all others have provision for slop drainage. Sixty-nine have the public water supply, while 22 are still dependent on wells; there are 64 water closets, all flushed but 6; 19 pail and 9 pit privies. All have good gardens except 11, where the curtilage is confined to small back yards, paved with rubble stone or bricked. In the 91 houses were 212 adults and 113 children, making a total of 325.

There was	1	house	of	9	rooms	} Not including back kitchens or sculleries.
"	"	1	"	"	7	
"	"	8	"	"	6	
"	"	23	"	"	5	
"	"	26	"	"	4	
"	"	31	"	"	3	
"	"	1	"	"	2	"

There were 3.6 persons per house, and .86 persons per room. No overcrowding was found; the largest family consisted of 2 adults and 7 children in a 5-roomed house. Besides these there were 10 empty cottages.

I found the backs generally clean; some paved, but many without paving; in some cases spoutings and shuttings were defective. Notices have been served on all owners where defects existed; most of these have been complied with, and the rest will be followed up. The drainage in connection with four houses was put in order, while 19 closets were provided with flush.

The parish remained free from infectious disease.

Ten deaths (influenza, apoplexy, and violence, 1 each) give a death rate of 12.7 per 1,000; the average for the preceding 10 years is 14.2.

Kingskerswell population 1,027—acreage 1,797. A large residential village, nearly midway between Newton and Torquay, whose water supply it shares, though there are still a few wells in use. Limestone is the chief geological feature. Water closets are general, the majority of which are flushed; there are two sewer outfalls, both of which have settling tanks, whose overflow irrigates meadow land; they are managed by the authority. The sewers are piped throughout.

NEW WORK.—The sewer was extended to Huxner Cross, to accommodate new houses—a distance of 200 feet, while the water main was carried along Foredown Road—1,050 feet.

Two new houses were built, and the drainage of two others put in order; three closets were flushed.

WHILBOROUGH, a hamlet in the parish, has a public well of fair quality, though the water is low in dry summers. The extension of the public water supply was discussed, but nothing was done.

One cow shippen was paved with concrete throughout; another repaired, and a cement gutter provided.

There were two mild cases of scarlatina in the spring, otherwise the parish was free from infectious disease.

Twelve deaths, of which 3 were due to cancer, and 1 each to influenza, tubercular disease, and violence, gave a rate of 11.7 per 1,000; two of these took place in the Union House among former residents. This was the lowest general death rate of the larger centres of population in the district, and was 3 points better than the decennial average of 14.6.

Kingsteignton population 1,942—acreage 3,975, lies on the clay formation of the Teign Valley, and is the chief seat of that industry. Water supply is derived from the Holywell Spring in Ugbrooke Park, and is of excellent quality; there is a reservoir below the intake of 85,000 gallons capacity. The flow of the spring varies considerably according to the season, but the parish is entitled to 43,000 gallons a day, with the option of purchasing more at threepence per 1,000 gallons; there is a meter for measuring the amount. The measures adopted for checking waste have been fairly successful, and the above quantity was not greatly exceeded during the past year.

The sewers are all piped, with the exception of a large tile and brick culvert, varying from 15 inches to 2 feet in diameter, which extends from the centre of the town to the outfall. It is here joined by the sewer from Gestridge, and at the junction is a septic tank, the overflow from which irrigates meadows; this has worked very well during the year.

Water closets are general, and practically all in the town are now flushed.

PRESTON AND SANDYGATE, hamlets in the parish, are supplied with water from the Kingsteignton mains; there are no sewers, and closets are mainly on the dry system.

NEW WORK.—Kingsteignton in 1909 shewed the greatest building activity in the district; nine new houses were built, plans for twelve being passed.

A scheme for putting up 50—80 new cottages at Sandygate has been mooted, but the question of drainage caused some discussion; this if not definitely settled and provided for from the beginning, is not unlikely to cause serious nuisance, and entail in the future considerable expense to the public. A number of cesspits in a limited area of lowlying meadow land is, I think, most undesirable, neither can the overflow of a septic tank be safely discharged into a stream without the interposition of either filter beds or else a sufficient scheme of land irrigation; the Council, however, recognise this point fully.

A length of 180 feet of new sewer has been laid in the vicarage meadow to take the slop drain from a cottage and farm yard, concerning which complaint was made from time to time.

It is also proposed to relay the sewer in the Chudleigh Road; this, owing to its level character, has for some time past shown signs of silting up; it was cleared for the time, but plans and specifications have been prepared by Mr. Rogers for a new sewer—of about 2,824 feet. By taking the junction with the Exeter Road sewer further down, a better fall will be obtained, and this section should then be self-cleansing.

The drainage in connection with three new houses was put in order, and five closets were flushed. At Gappa, the drainage and water supply of a farm and several cottages were improved.

Several cases of diphtheria were reported in the beginning of the year (see page 18) without, however, mortality. There were also four scarlatinal attacks

confined to one family. Two cases of typhoid fever in the early summer months unfortunately resulted fatally.

Thirty-three deaths were recorded, giving a rate of 17.0 per 1,000. The chief causes of fatality were:—typhoid fever, 2 deaths; diarrhœa, 2; tubercular disease, 2; apoplexy, 3; and infantile debility, 1. Four took place in the Union House and County Asylum in persons belonging to the parish. The decennial average worked out at 18.4.

Lustleigh population 400—acreage 2,978. This village lies in an elevated though sheltered valley, about 300 feet above sea level; granite is the main geological feature. Water supply is derived from the South Harton spring, and is soft, pure, and abundant; the reservoir, which has a capacity of 50,000 gallons, maintained a constant supply throughout the year. Most of the houses are connected with the mains.

The sewerage system is combined with that of Brookfield and Wreyland, which are in the parish of Bovey Tracey; and this has an outfall in a meadow below the village, which is managed by the authority.

One new house was built and plans for 11 others were passed; in the latter case it is proposed to lay out a meadow above the village, but work has not as yet commenced. The drainage of three dwellings was put in order.

There was an outbreak of measles in the early spring, which was remarkable, inasmuch as the disease had been prevalent in December, 1908, and an interval of two months elapsed before the remaining susceptible children were attacked; there were no fatalities.

Notifiable disease was confined to a single case of diphtheria in an isolated cottage—see page 21.

Four deaths (2 from cancer) give a general rate of 10.0 per 1,000; the mean for the preceding 10 years being 11.9—both excellent figures, which show the healthy condition of the parish.

Manaton population 315—acreage 6,422. A moorland and sparsely populated parish, at an elevation of 800 feet above sea level; a few houses near the church and school, with the adjacent hamlets of FREELAND and WATER, comprise all the centres of population. Private wells and springs constitute the water supply, which is generally pure and abundant, and of the usual granitic type.

There is a short sewer crossing the green, but closets are mostly on the dry system.

Four new houses were built, and plans for two others passed.

Two cottages at Barracot were provided with a well and pump, in place of the open stream from which a supply had been hitherto derived.

Except for a few cases of measles, with one fatality, the parish was free from infectious disease.

Eight deaths (1 each from measles, phthisis, and cancer) give an annual rate of 25.4 per 1,000, but the decennial average is only half that figure—12.9.

Moretonhampstead population 1,541—acreage, 7,910. This moorland town lies at an elevation of nearly 700 feet above the sea level. The water is derived from various springs at Moor, and is soft and pure. The area of intake—beds of granite sand—is considerable, and the carrier pipes to the reservoir are nearly all socketed and cemented glazeware; the storage amounts to about 100,000 gallons in an open reservoir. A constant supply was maintained throughout the year.

Water closets are general; those in the town are practically all flushed. The sewerage system consists of two main sewers, encircling the hill on which the town stands, which unite just below the station. Down to this point there is a rapid fall, while a stretch of three-quarters of a mile of comparative level follows, terminating in a septic tank, with overflow irrigating meadow land; this is managed by the owner of the farm in question. This system never worked very satisfactory, partly owing to the amount of storm water it received, and partly owing to the differences in the gradient between the town sections and those below; during the autumn alterations and additions were carried out in accordance with plans prepared by Mr. Segar, and approved of by the Local Government Board, at a cost of £500. Under this arrangement, most of the storm water is separately provided for, especially in the Kinsmansdale valley; it was also found necessary to relay portions of the first scheme. It is, perhaps, too early to say if all the trouble has been removed, but up to the present time, the modification has worked very well.

House refuse is removed three times a week.

NEW WORK.—Two new houses were built; the drainage of another was put in order, and three closets flushed.

The hamlet of DOCCOMBE, on the Exeter Road, about 750 feet above sea level, is supplied with water by one spring and several wells, generally of fair quality.

An outbreak of scarlatina among children occurred in the last quarter of the year, but without fatality. This is mentioned in detail on page 14.

Twenty-one deaths were registered, and the chief causes of fatality were apoplexy, 3 deaths; phthisis, 2; cancer, 2; infantile debility, 1; and violence, 1. This gives a death rate of 13.6 per 1,000, which is nearly 5 points lower than the decennial average of 18.4.

Besides the above, there were three deaths in the Cottage Hospital in persons belonging to other parishes (Manaton 2, North Bovey 1), to which they are credited.

North Bovey population 398—acreage, 5,589. This parish is on the border of the Moor; in fact, the whole of the Moreton sub-registration district, which includes Moreton, Lustleigh, Manaton, and North Bovey, lies on a granite formation at a considerable height above sea level.

The village depends for its water supply on wells, both public (on the green) and private.

There is one short sewer, but pail privies are almost invariably in use.

No sanitary work of importance was carried out.

The parish was free from infectious disease.

Four deaths (as in 1908), of which 2 were due to apoplexy, give a general death rate of 10.1, while the average for the years 1899-1908 was 8.7. Both these are excellent figures.

Ogwell population 250—acreage, 2,089. The water supply is derived from a deep well in the shale (100 feet), about a mile from the village; the water from this is pumped into a reservoir by a windmill, and thence distributed by stand pipes, though three or four farms and other houses have private taps. Hitherto the parish has all been included in one estate, but this during the past year was sold, and is now divided among several owners. Under these circumstances the question of the Council acquiring the water supply came under discussion, and I made a special report on the subject at the July meeting.

There are 38 houses in the village (including public house, school-house, bakery, and four farms), using the water, but one farm has a sufficient and independent supply as well. This would mean a population of about 170. There are 47 children at the school, but closets are on the dry system; indeed, there is only one water closet supplied.

Eight cattle troughs and eight private taps are connected with the mains, while there are seven public standpipes in the road.

After two years' experience of the management of this scheme, I have found that there is barely enough water for the domestic use of the present population. Cattle troughs can only be supplied in the winter, and when the water in the reservoir gets low private taps have been cut off as well. In dry summers, the lowest standpipes have also been stopped, and the well and pump in the centre of the village (water of very good quality) made use of for the adjacent cottages.

The public water is of excellent character—rather softer than that from the well. The capacity of the reservoir is unknown, but it is 7ft. 6in deep. I am of opinion that

- (i) If the Council purchase the water they should have absolute control, without any liability to supply cattle troughs.
- (ii.) The Council should also obtain control over the well in the village; a pump in connection with this placed at the blacksmith's corner, would bring this water 100 yards nearer a block of 6 houses.
- (iii.) The present windmill, though supposed to be self-regulating, is not so, and requires constant attention according to the wind velocity; this, if altered, would reduce working expenses and give better results.

Thus the present system is only barely sufficient for the domestic needs of the existing population, and does not provide for any possible development in the future; it remains to be seen whether the division of this property is attended with any building operations. There are two methods of dealing with the water question here; one is to make the best of the existing scheme by deepening the well, providing an engine for pumping purposes, and using the well in the village as an auxiliary. In view, however, of the expense, both initial and perpetual for upkeep, it would probably be cheaper in the end, and also ensure a better provision to negotiate for a supply from the Torquay or Paignton authorities, whose mains are within reach.

Closet accommodation is of the privy type, and there are no sewers.

No sanitary work of importance was carried out. The parish was free from infectious disease.

Three deaths (1 each from influenza, apoplexy, and violence) give an annual rate of 12.0 per 1,000, while the mean for the previous ten years worked out at 16.1.

Stoke population 463—acreage 2,167. There are two public pumps and many private wells; this is a sandstone district, which generally yields a plentiful supply, and there were no complaints of scarcity in 1909.

There is one small sewer which discharges into the brook, but there are few water closets, and these are, as a rule, hand flushed.

A new sewer—200 feet—was laid past Home Farm; two cottages were provided with slop drainage.

The hamlet of HIGHER GABWELL is supplied by wells.

MAIDENCOMBE, which lies in an isolated position on limestone cliffs, overlooking the sea, has one public well and a few private ones, but several houses near the summit depend largely on rainwater storage.

A widespread outbreak of whooping cough in the spring and early summer caused three fatalities among young children, and indirectly another in which the disease was followed by phthisis. There were no cases of notifiable infectious disease.

Eight deaths (whooping cough, 3; influenza and phthisis, 1 each), give a rate of 17.3 per 1,000, as compared with a decennial average of 14.3.

Teigngrace population 190—acreage 1,496. A small and sparsely populated parish in the Teign Valley. The water supply is largely derived from wells, generally of the moderate or indifferent quality yielded by the clay formation of the neighbourhood.

The schools, 6 adjacent cottages, and a farm, have however, an excellent spring water piped down from Staplehill.

The drains at Ley Green Farm were re-laid.

Infectious disease was limited to a few mild scarlatinal cases late in the year.

Three deaths (1 from violence) give an annual rate of 15.8 per 1,000, while the mean for the preceding ten years was only 8.1, or little more than half that figure.

Trusham population 165—acreage 625. This is considerably the smallest in area, and with the exception of Buckland, the least in population. The village occupies an isolated position on

the western slopes of Haldon, at an elevation of about 300 feet. There is one dipping spring of very fair quality, which was, as usual, low in the summer. There is also a deep well (70 feet) in the upper part of the village, but the water supply is not very satisfactory.

A short sewer, 56 feet, was constructed to take slop and surface water from four cottages.

The stone quarries near the station continue to develop, but no cottage provision has been made for the workmen, other than that available in the neighbouring villages. If their numbers increase further, this matter will become a serious one.

Except for several cases of diphtheria, in one family (see page 20) the parish was free from infectious disease.

Two deaths were registered in 1909; this gives a general rate of 12.1 per 1,000, a great improvement on the decennial average of 17.0

Widcombe population 657—acreage 10,786. This moor parish is the largest in area in the district, and has a considerable proportion of uncultivated land; the villages of LOWER TOWN, WIDECOMBE & PONSWORTHY, and the hamlets of POUNDSGATE and DUNSTON are the chief centres of population. The granite formation of the locality yields, generally speaking, pure, soft, and abundant waters. Many of the houses at Widcombe are supplied by a spring on the glebe land, brought in by gravitation; there is also a dipping spring, with overflow, of very fair quality.

Ponsworthy has two good springs, and there is also an excellent spring at Lower Town, though at some little distance from the houses, besides private wells. The pump provided has broken down owing to action of the frost.

There are few water closets, and only one short sewer (at Widcombe); closets are, as a rule, on the dry system.

One new house was built; the "Old Inn" was enlarged.

The question of the drainage running down the roadside at Widcombe village has arisen, and it has been proposed either to lay a piped drain or a brick channelling below the public spring, and bring all waste water into this. There is a constant stream of water,

which is available for flushing purposes. Owing, however, to winter springs and floods nothing can be done for some months.

The parish was free from infectious disease.

Six deaths (cancer and apoplexy, 1 each), give the low annual rate of 9.1 per 1,000, as compared with a mean of 14.1 for the preceding ten years.

Woodland population 170—acreage 1,634. This is another parish of purely rural type, in which moreover there are no centres of population; shales and slate are the predominant geological feature. Water is derived from wells, and is generally abundant.

Closets are mostly on the dry system, and there are no sewers.

Three cases of mild scarlatina (in two families) occurred among children attending schools outside the parish; otherwise no infectious disease was reported.

Eight deaths (1 from influenza) give the high rate of 47.1 per 1,000; this is, however, illustrative of the accidental fluctuations which occur in very small populations. The decennial average worked out at 7.5—or little more than one-seventh of the above figure.

The details of Mr. R. A. Rogers' (the Sanitary Inspector) Report have been incorporated under the different parishes, and I append the usual table shewing the principal sanitary work done in each, for purposes of comparison.

Eighty-one legal and 144 intimation notices were served; these have either been complied with or being followed up.

Twenty-nine houses were completed, as compared with 35 in 1908, while plans for 44 were passed; 19 of the former were workmen's dwellings.

New sewerage, to the extent of 1,596 feet (950 feet in 1908) was constructed, while 3,720 feet of 3 inch water mains were laid (5,350 feet in 1908); the drainage

Table showing Sanitary Work carried out in the different parishes in 1909.

PARISHES.	New Houses.		Water supply.	New sewers (in feet).	Old Houses.				Drain Tests.	Rooms fumigated and disinfected.	Houses (or part of) limewashed.	REMARKS.
	Built.	Plans passed.			New drains.	Houses served.	Closets provided or flushed.	Earth Closets.				
Abbotskerswell	1	1	1	...	1	1	...	Water main and sewer extension. National schools and 11 private houses connected to sewer New sewer laid for Houndhead Cottages.
Bickington	2	...	...	...	3	3	12	...	3	1	...
Bishopsteignton	1	2	220 ft. of 3in. main.	550	13	12	36	...	24	15	...	
Bovey Tracey	3	5	...	70	1	3	...	1	...	6	...	
Bro. dhempstn	...	...	...	...	...	...	...	...	...	...	...
Buckland...	140	1	1	3	...	10	25	5	Extension of water main to Rocklands. New sewer in Silver Street. New water supply provided at Shiphay Collaton schools.
Chudleigh	3	...	1950 ft. of 3in. main	...	...	...	...	...	...	...	...
Cockington	...	...	...	...	...	...	...	...	...	...	...
Coffinswell & Dacombe	High'r public well cleaned out, enclos'd, and pump provided New water scheme for Cofton and Warren; main extended to G.W.R. Station and Golf Links.
Coombe & Hacombe...	...	...	...	...	1	1	38	...	...	2	...
Pawlish West	1	3	500 ft. of 3in. main.	...	...	...	...	...	...	...	...
Denbury & Torbryan...	1	1	2	2	3	2	...	Reservoir cleaned out and new collecting pipes laid from spring
Hennock	...	...	...	...	...	...	...	...	...	...	...
Ideford	...	...	...	...	1	1	2	...	...	...	...
Ilington	...	4	3	5	2	Channelling at village extended 30 feet : school closets and drainage reconstructed. New Sewer at Dornafeld Lane.
Ipplepen	...	...	...	200	4	4	19	...	6	5	...
Kingskerswell	2	3	1050 ft. of 3in. main	200	2	2	3	5	5	5	...	
Kingsteignton	9	12	...	180	3	3	15	23	...	Extensions of water main and sewers. Plans and specifications passed for relaying Chudleigh Road sewer.
Lustleigh	1	11	...	...	3	3	...	...	4	1	...
Manaton	4	2	...	...	...	1	3	...	2	1	2
Moretonhampstead	2	2	1	4	16	...	Sewerage scheme has been altered as suggested by Mr. Segar, with consent of Local Government Board.
North Bovey	...	...	...	...	...	...	...	...	1	...	...
Ogwell	...	...	...	200	...	...	...	...	...	2	1
Stoke	1	7	1	New sewer laid past Home Farm.
Teigngrace	...	...	...	56	...	...	...	...	...	3	...
Trusham	...	...	...	...	...	...	...	...	1	...	...
Widcombe	1	...	...	...	...	...	...	...	...	2	...
Woodland	
Totals	29	44	3720 ft. of 3in. main	1596	35	36	124	3	83	119	11	

in connection with 36 houses was put in order; 124 closets were flushed, chiefly in Bovey, Dawlish West, and Ipplepen; 83 drain tests were made, and 119 rooms fumigated with the formalin lamp, or sprayed by Mr. C. N. Rowe, Assistant Inspector. Most of the latter were carried out in connection with diphtheria and scarlatina, but a few followed cases of phthisis and cancer. Eleven houses were wholly or partially lime washed by the Authority.

The following is a list of the more important public works completed or under construction in 1909, or contemplated in the immediate future:—

ABBOTSKERSWELL.—Sewerage extensions still remain to be carried out.

CHUDLEIGH.—Construction of a septic tank at the main outfall is in abeyance pending the purchase of a suitable plot of ground.

DAWLISH WEST.—Public water supply has been provided for Cofton, Middlewood, Westwood, and Mount Pleasant.

HENNOCK.—Scheme for storing the spring which supplies the village, and distributing it by standpipes is awaiting negotiations with the ecclesiastical authorities.

ILSINGTON.—Comprehensive water scheme for several villages and hamlets is still in abeyance.

KINGSTEIGNTON.—Reconstruction of the Chudleigh Road sewer is under consideration (2,824 feet).

MORETONHAMPSTEAD.—The sewerage scheme has been modified according to plans prepared by Mr. Segar, and approved of by the Local Government Board.

WIDECOMBE.—Provision for slop and waste water, running by the roadside in the village, is under contemplation.

SCHOOL SANITATION.—Work carried out in 1909, with reference to the schools mentioned in my report for the previous year as needing attention; Shiphay Collaton (Cockington) has been provided with an excellent spring water supply; Ilsington School and

schoolhouse drains have been entirely re-constructed, the old troughs and cesspits being replaced by wash-down pans, flushed from the stream, connected to a septic tank with overflow irrigating an orchard; but the provision of water for drinking purposes awaits a public supply. The proposed new school at Bovey Tracey has not yet been built.

The old trough closets at the National Schools, Bovey Tracey, have been complained of, and need reconstruction.

It is proposed to connect the Cofton School (West Dawlish) with the new public water supply; the closet flushing tanks are now filled by a force pump.

The condition of the schools in the district, of which there are 35, is very fair, both as regards water supplies and sanitation, and little remains to be done.

Most of the schools have now been visited by the School Medical Officer, but his report is not yet available. As the children have now the advantage of the undivided attention of special officers, it is important that their advice should be fully made use of; and in many instances the parents have acted on it; but in many others they have not done so, and opportunities of improving the general health, and hence the future capabilities of these young lives is lost. No doubt this will improve as time goes on, and the public become fully educated on the subject, but I would suggest that head teachers, whom I have always found ready to take any trouble for the benefit of their charges, should personally impress on the parents concerned the advisability of giving the verdict of the school doctor their most earnest consideration. In this district it is always possible to get recommends for the hospitals at Newton or Moreton, which are within easy access by rail of all the important centres, in cases where operations or treatment which cannot be carried out at home are necessary, and I am always willing to give any information or assistance in the matter. In connection with the schools, the following points seem to me of importance, and some of them have been mentioned in former reports:—

- (i.) All schools should be scrubbed out regularly once a month; in rural districts, children often come long distances along muddy roads; this mud is taken up and dries in the form of dust on the floors.

- (ii.) In the daily sweeping, sawdust damped with disinfectant should be used, and the dust raised by dry sweeping—only to resettlement—thus minimised.
- (iii.) Closets require occasional scrubbing; yard gullies in the summer tend to become foul, and flushing from time to time with disinfectant solution is easily carried out. A few cans of creolin (or other disinfectant) should be part of the school equipment.
- (iv.) In order to detect “missed cases” of infectious disease, such as diphtheria or scarlatina, it would in my opinion, be of great advantage if every child always kept the same place, and thus had the same neighbours.
At present, in many schools, the children are moved about for different lessons, and the number of contacts is thus indefinitely increased.
- (v.) Every child should have its own locker, with books, pens, and pencils, so that these are not passed about from hand to hand.

I append the report of Mr. C. N. Rowe, Assistant Sanitary Inspector, on the working of the Factories and Workshops Act; a parish table of these, including the dairies and slaughterhouses, is given for purposes of comparison.

Report on the Factories and Workshops, Slaughter-Houses and Bakehouses in the District for the year, 1909:—

I have inspected the whole of the Workshops on the Register.

These included:—Bakehouses, 39; Laundries, 11; Milliners and Dressmakers, 14; Boot Repairers, 2; Builders, 12; Coach Builders and Wheelwrights, 9; Plumbers, 4; Gasworks, 4; Saddlers, 5; Smiths, 7; Tailors, 6; making a total of 113.

In no cases are outworkers employed; on very rare occasions is overtime worked, and I found the Abstract of the Factory and Workshop Act posted up on all occasions.

TABLE SHEWING DAIRIES, SLAUGHTER HOUSES, BAKERIES
AND WORKSHOPS IN THE VARIOUS PARISHES.

Parishes.	Dairies, Cow-sheds	Slaughter houses	Bakehouses	Boot repairers,	Builders	Coachbuilders & Wheelwrights	Gasworks	Laundries	Milliners and Dressmakers	Plumbers	Saddlers	Smithies	Tailors
Abbotskerswell	11	2	1	...	...	...	...	...	...	...	...	...	...
Bickington	2	...	...	...	...	...	...	...	...	...	...	...	...
Bishopsteignton	11	2	1	...	2	1	1	3	...	...	...	1	...
Bovey Tracey	19	3	6	2	4	1	1	...	4	3	1	3	2
Broadhempston	4	1	1	...	...	...	...	...	...	...	...	...	...
Buckland.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Chudleigh	13	5	8	...	3	2	1	4	3	1	1	1	2
Cockington.....	16	2	...	...	...	...	...	...	...	...	...	...	...
Coffinswell & Dacombe	6	...	...	...	...	...	...	...	...	...	...	...	...
Coombe and Haccombe	6	1	1	...	...	...	...	...	...	...	...	...	...
Dawlish West	11	...	...	...	...	...	...	...	...	...	...	...	...
Denbury and Terbryan	3	2	1	...	...	...	...	...	...	...	...	...	...
Hennock	5	...	2	...	...	...	...	...	2	...	...	...	...
Ideford	1	...	...	...	...	...	...	...	...	...	...	...	...
Ilsington	9	1	1	...	...	...	...	...	...	...	...	...	...
Ipplepen	7	2	2	...	...	...	...	...	...	...	...	...	1
Kingskerswell	18	6	2	...	...	1	...	...	...	...	...	...	...
Kingsteignton	22	3	4	...	2	1	...	4	2	...	1	1	...
Lustleigh	3	...	1	...	...	...	...	...	...	...	...	...	...
Manaton	2	...	...	...	...	...	...	...	...	...	...	...	...
Moretonhampstead ...	11	3	6	...	1	3	1	...	3	...	2	1	1
North Bovey .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Ogwell	2	1	1	...	...	...	...	...	...	...	...	...	...
Stoke.....	9	...	1	...	...	...	...	...	...	...	...	...	...
Teigngrace	4	...	...	...	...	...	...	...	...	...	...	...	...
Trusham ..	1	...	...	...	...	...	...	...	...	...	...	...	...
Widecombe	1	...	...	...	...	...	...	...	...	...	...	...	...
Woodland .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ..	197	34	39	2	12	9	4	11	14	4	5	7	6

There has been one case of overcrowding in a dress-maker's workroom at Chudleigh, which has since been remedied. I have visited the place since, and found the same to be now in compliance with the Act.

Urinal accommodation at a Cyder Factory at Abbotskerswell was provided at the instance of the Factory Inspector.

One notice was served on the occupier of a bakehouse to limewash; this has been complied with, but constant attention has been necessary in this instance.

SLAUGHTERHOUSES.

There are 34 on the register. 51 personal visits have been paid to these in addition to those of Mr. Rogers and the M.O.H.; on each occasion the premises were found in a cleanly state.

The floors in some cases need small repairs, but the majority are in good condition.

These are cleaned up at the end of the day, when slaughtering has taken place.

The walls of almost everyone are cement, rendered to a height of about 6 feet, and the parts above are limewashed at least four times a year, and oftener if required. The premises are well lighted and ventilated, each slaughterhouse having a plentiful supply of water to same, and on the whole are very satisfactory.

BAKEHOUSES.

Of these there are 39 on the Register, two of which may be termed as underground.

They are in most cases clean, well lighted, and ventilated, and the sanitary accommodation is good.

They are all limewashed twice a year, some occupiers doing it oftener, but one notice had to be served to compel this.

A new bakehouse has been built at Moretonhampstead for the Co-operative Society.

BUILDERS.

These workshops are generally situated in the yards and consist of two storey buildings, the uppermost being approached by internal staircases, and in some external ones, but in a few cases they are on the ground floor.

They are large, well lighted and ventilated, and are limewashed when required; the sanitary accommodation is good and sufficient for all employed.

COACHBUILDERS AND WHEELWRIGHTS.

These, as a rule, consist of one or more workshops on the ground floor, some being double storey, and are well up as regards sanitary requirements.

LAUNDRIES.

This class of work is not carried on to a great extent.

The drainage of the floors, except in a few, is fairly satisfactory.

They are provided with ample light and ventilation, the ironing being carried on in a separate room than that of the washing.

PLUMBERS.

There are only five work places registered, and in one, at Bovey Tracey, additional accommodation has been provided.

The sanitary condition of these are satisfactory.

MILLINERS AND DRESSMAKERS.

The workrooms of these are generally in a room at the back; in some cases upstairs rooms are used. There are 14 on the register, and are fairly satisfactory as to air space for each worker, lighting, ventilation, and sanitary requirements.

In one at Chudleigh there was a case of overcrowding as before mentioned.

SADDLERS.

In this kind of work there are not many employed. It is usually carried on in the shop, one or two having separate workrooms, and on the whole are in fairly good condition.

SMITHS.

In this class of work, as in the coachbuilding trade, there are a few apprentices, the premises being fairly satisfactory; the roofs are generally slated or tiled, thus providing means for the escape of smoke, etc.

TAILORS.

The premises are in this case up to the requirements. In one at Bovey Tracey a new room has been obtained in another part of the house, which is a great improvement in every way on the one previously used.

In addition to the inspection of the workshops, etc., my time is largely employed in drain testing, also after cases of infectious disease with the addition of the fumigation of the rooms, this year amounting to 111, and 8 sprayed with cyllin.

Numerous journeys of inspection are made in the district, sometimes by request of the Medical Officer of Health, at others by the Inspector.

C. N. ROWE,

Assistant Sanitary Inspector.

II. NEWTON ABBOT URBAN.

PHYSICAL CHARACTERS.—The bulk of the town is situated in the level basin of the Lemon, which debouches on to the Teign Valley; some of the lower houses stand on the alluvial soil adjacent to the delta of those rivers. This valley is surrounded by hills from 200 to 300 feet high, on which numerous villa residences have been built. Of late years the town proper has been gradually extending on the lower slopes of the hills, and the new suburbs of Decoy, on the old Torquay Road, and Abbotsbury, on the Highweek side, have arisen. The main streets are, as a rule, wide; there are comparatively few cross streets connecting them. In the older parts of the town some of the intervening spaces are occupied by Courts—22 in all—containing from 1 to 18 houses (and about 150 in the aggregate); others have disappeared from time to time, while a still further reduction is under contemplation.

OCCUPATION.—The chief industries in the town are the locomotive and coach repairing shops of the G.W.R., a large tan yard, and clay works; these afford employment for several hundred men, the great majority of whom, with their families, live in the town. Newton being surrounded by a large agricultural district, with railway facilities in various directions, has an important market, where much business is transacted. It is also a tourist centre, has many residential attractions, and, therefore supports a considerable class of retail tradesmen.

There are as far as I know no special diseases which are the outcome of any local condition of employment.

The geological formation of the hills on the Wolborough or southern part of the district is greensand, gravels, and clay, while in the Highweek or northern parish shales predominate.

The district comprises the parishes of Wolborough, Highweek, and Milber (the latter being a porton detached from Coombe in 1901), a total area of 4,132 acres; at the last census there were 2,704 inhabited houses containing 12,518 persons. an average of 4.6 per house. Since then, however, plans for 535 new dwellings have been passed, and the estimated population. calculated on the rate of increase between the census of 1891 and that of 1901, is 13,700.

VITAL STATISTICS.—The number of deaths registered in the district during 1909 was 242, 98 of which took place in public institutions (Union House, Hospital, and Isolation Hospital); 70 of the latter belonged to other districts, and are, therefore, deducted, while 8 deaths at the County Asylum (Exminster), among former residents, are added. This gives a net total of 180, of which 81 were in males, and 99 in females, equal to an annual rate of 13.1 per 1,000. This is two points below the average rate for the preceding ten years, and 2.6 less than that of 1908.

The deaths in the four quarters of the year were 50, 34, 40, and 56, giving rates per 1,000 per annum of 14.6, 9.9, 11.7, and 16.4 respectively—thus the last quarter shewed the highest mortality, while the first was not far behind. December (23 deaths), and March (21), were the most fatal months, while June (9), May and August (11 each), gave the best returns.

CHIEF CAUSES OF FATALITY.

7 chief zymotic diseases ...	7 deaths	
Malaria	1	„
Puerperal Fever	1	„
Other septic diseases ...	3	„
Influenza	8	„
Constitutional diseases ...	32	„ (17 cancer, 9 phthisis)
Diseases of the nervous system	25	„ (14 apoplexy)
„ „ respiratory „	18	„
„ „ circulatory „	23	„
„ „ urinary „	5	„
„ „ digestive „	9	„
„ „ generative organs	1	„
„ „ parturition ...	2	„
Infantile debility	5	„
„ „ malformation ...	2	„
Premature birth	7	„
Old age	21	„
Violence	10	„ (8 accident, 1 murder, 1 manslaughter)

AGE INCIDENCE.

Under the age of 1 year there were 29 deaths.

Between 1 and 5 years	„	„	3	„
„ 5 and 15 years	„	„	3	„
„ 15 and 25 years	„	„	7	„
„ 25 and 65 years	„	„	60	„
Over 65 years	„	„	78	„

COMPARATIVE TABLE.

DEATHS FROM	1909	Average of years 1899-1908	1908	1907	1906	1905	1904
Small Pox ... ..	...	...	...	...	...	...	...
Measles ... ..	...	...	19	5	3	5	...
Scarlatina ... ..	...	...	...	...	...	...	...
Whooping Cough ... ..	...	3	5	2	1	6	2
Diphtheria ... ..	...	1.5	5	6	...	...	...
Continu'd Fevers (typhoid, &c) ... ..	...	1.5	1	1	4	1	...
Diarrhœa	7	5	4	3	12	...	9
TOTAL 7 CHIEF ZYMOTICS :	7	16	34	17	20	12	11
Phthisis	9	14.5	13	11	18	16	22
Other Tubercular Diseases...	1	5.5	4	8	7	7	5
Bronchitis, Pneumonia, Pleurisy	16	24	28	25	22	27	25
Heart Diseases	21	19	22	29	25	19	22
Cancer	17	12	11	8	10	10	21
Violence	10	5	7	5	6	6	3
All other Diseases	99	91	94	96	79	117	92
Total Deaths	180	187	213	199	187	214	201
Estimated Population ...	13700	12332	13550	13400	13250	13100	12950
General Death Rate ...	13.1	15.2	15.7	14.9	14.1	16.3	15.5
Zymotic Death Rate ...	.51	1.3	2.5	1.3	1.5	.92	.85
Total Births	298	284	279	305	329	290	297
Birth Rate	21.8	23.0	20.1	22.8	24.8	22.1	22.9
Deaths under 1 year ...	29	34	35	31	35	38	34
" between 1 & 5 years	3	14	33	9	9	17	10
" over 65 years ...	78	63	58	83	71	79	74
" und'r 1 yr. to 1000 bths.	97	120	125	102	106	131	114
Deaths in Union House ...	72	72	87	64	96	91	81
Deaths in Union House belonging to District ...	11	17	20	16	22	25	26
Deaths in County Asylum belonging to District ...	8	...	3	6	4	5	...
Average Age at Death ...	50.5	...	39.7	47.1	43.8	44.4	..

Thus the percentage of deaths under one year to the total was 16.1; and of those over 65 years, 43.3; the former figure is practically the same as that of the previous year, while the latter shows a considerable improvement, the percentages of 1908 being 16.4 and 27.2 respectively. The average age at death was 50.5 years, as compared with 39.7 in 1908, and 47.1 in 1907.

The infantile mortality, or deaths under one year to 1,000 births, was 97; this is less by a fourth than that of 1908, shews nearly the same diminution when compared with the decennial average, and has fallen below 100 for the first time since 1889, when the figure was 90.

The causes of infant deaths were:—Diarrhœa, 5; septic diseases, 1; diseases of the nervous system, 3; of the respiratory system, 3; debility, 5; premature birth, 7; malformation, 2; accident, 2; and manslaughter, 1. Thus premature birth, diarrhœa, and debility accounted for nearly threequarters of the total mortality.

I have made the usual investigations on the subject with results as follows:—Of the total 29 infants who died in the town, 26 (or 83 per cent.) belonged to the working classes; while in 17 cases (or 59 per cent.) the father was earning under £1 a week, or in uncertain employment. In 10, or (omitting premature births, violence, and congenital defects) 59 per cent., the children were either wholly or partially brought up by hand. There were only 2 fatalities in the Courts, which gives a rate of 3.4 per 1,000, as compared with 2.1 for the whole district. Eighteen deaths were in houses on the lower levels, and 17 in the older dwellings; in no cases were any definite unsanitary conditions found, though one house was somewhat damp. In eight cases the children were stated to have been born delicate; these included 4 diarrhœa, 3 debility, and 1 bronchitis, while one or other parent had weak constitution in the same number. Only one of the children was illegitimate, six were first born, while three were twins.

Of the five who died from diarrhœa, four were either wholly or partially brought up by hand; these latter occurred in September, while the other (nursed by the mother) took place late in October.

There were 3 deaths from violence, two being suffocated in bed with the mother; the other was certified by the coroner's jury as manslaughter; this was the only one illegitimate.

There was also one fatality in the Union House "accidentally suffocated in bed."

Appended is a table showing these figures in comparison with seven previous years : —

YEAR	Total Infant deaths excluding Union House	Working Classes	Under £1 a week or in uncertain employment	Hand fed	DEATHS FROM						Illegitimate	In Union House
					Digestive System		Respiratory system	Debility	Premature Birth			
					Total	Hand fed						
1902	33	34	19	20	15	12	4	6	6	1	7	
1903	31	29	22	17	8	7	8	3	5	6	8	
1904	34	32	22	24	16	16	2	6	8	5	3	
1905	38	36	27	12	...	...	12	4	12	4	3
1906	35	28	20	21	10	8	6	5	6	3	2	
1907	31	30	22	14	3	2	7	10	9	1	...	
1908	34	26	21	17	4	3	10	6	3	3	4	
1909	29	26	17	10	5	4	3	5	7	1	1	

The births of 158 boys and 140 girls give an annual rate of 21.8 per 1,000, which is 1.7 above that of 1908, though still somewhat below the average of 23.0. The births for the four quarters of the year numbered 77, 78, 77, and 66, giving rates per 1,000 per annum of 22.5, 22.8, 22.5, and 19.3 respectively. The natural increase or excess of births over deaths, reckoning the due proportion of mortality in the Union House and County Asylum, was 118, as compared with 66 in 1908 and 106 in 1907; this gives a gain of 8.6 per 1,000.

In the Union House, which is situated in the district, there were 72 deaths, of which 38 were in males, and 34 in females.

Chief causes of fatality were : —

Puerperal Fever	...	1	death
Constitutional diseases	...	10	,, (phthisis, 5 ; cancer, 2)
Diseases of the nervous system	...	15	,, (apoplexy, 5)
,, ,, respiratory	...	6	,,
,, ,, circulatory	...	7	,,
,, ,, urinary	...	3	,,
,, ,, digestive	...	1	,,
Old age	...	28	,,
Accident	...	1	,,

Forty-one were over 65 years of age, and the average age at death was 61.7 years.

Their local distribution was as follows:—Newton Urban, 11; Newton Rural, 15; Dawlish, 4; Torquay, 35; Teignmouth, 5; and Ashburton, 2.

In the other public institutions in the district there were 26 deaths; 20 in the Hospital, and 6 in the Sanatorium. All of the latter, except one (that of a visitor) belonged to the Rural District, while 17 of the former were assignable to the Urban and 3 to the Rural District.

The figures for the past year may be considered to be on the whole very satisfactory, and shew a great improvement as compared with its immediate predecessor. The general death rate is well below the mean, and is the best attained since 1897, while the infantile mortality has not been equalled for the past twenty years. The zymotic rate, too, is equally favourable, and even this is somewhat discounted by the fact that two deaths (due to dysentery in elderly persons) occurred among former residents in the County Asylum. Turning to other chief causes of fatality, phthisis was responsible for 9 deaths—a considerable decrease, both as compared with 1908, or the decennial average; this rate was .66. Moreover only one death was due to other tubercular diseases, so that, on the whole, tubercle shewed a marked diminution. On the other hand, cancer advanced from .81 per 1,000 to 1.2, so that the two diseases (phthisis and cancer) interchanged their relative positions, with the result that the combined rate of 1.86 per 1,000 was nearly equal to the average for the preceding 10 years (2.1).

Notwithstanding the cold and wet summer, the mortality from the respiratory group was about one-third less than the mean, while heart disease remained at a slight increase over the normal figure. Deaths from violence, however, were somewhat numerous.

Turning to the mortality at different age periods, only 32, or 16.6 per cent., were under 5 years—less than half that of 1908, which, however, suffered considerably in this respect from measles and whooping cough—while the proportion of senile fatalities, together with the mean age at death, was correspondingly increased.

As elsewhere, the birth rate shews a tendency to remain stationary at a point or so over 20 per 1,000.

ZYMOTIC DISEASES.—From the 7 ordinary zymotic diseases 7 deaths were registered, all being due to diarrhœa; this gives a rate of .51 per 1,000, as compared with 2.5 in 1908, and a decennial average of 1.3. Two of these, however, as mentioned above, took place

in the County Asylum, and if they are deducted the figure is reduced to .37.

Notifications of infectious disease were 29 in number, as compared with 79 in 1908, and 61 in 1907—a marked diminution. They included 10 diphtheria, 1 typhoid fever, 13 scarlatina, 1 puerperal fever, and 4 erysipelas. Appended is a table shewing the monthly incidence:—

DISEASE	January	February	March	April	May	June	July	August	September	October	November	December	Total
Small Pox
Scarlatina	1	2	1	1	1	...	3	1	3	13
Diphtheria	1	...	...	...	5	...	...	1	...	3	...	10
Typhoid Fever	1	...	...	...	...	...	...	1
Erysipelas	1	...	...	...	1	...	...	1	1	...	4
Puerperal Fev'r	1	...	...	...	...	...	...	1
Cholera...
Total	1	1	1	2	8	2	1	1	4	5	3	29

MEASLES AND WHOOPING COUGH.—No cases of the former disease were reported, and though a few of the latter occurred in Wolborough Street and neighbourhood, during the summer months, there were no fatalities.

SCARLATINA shewed a slight tendency to increase, since there were 13 cases reported, as compared with four in the previous year. There was, however, nothing in the nature of an epidemic, and the attacks were scattered over the last nine months of the year, three being the largest number in any one month. Moreover the three reported in December were in an outlying part of the Highweek parish, and their associations were with the Teigngrace School in this respect. Of the remainder, two occurred in the Hospital in May; one of these was a young child, and as he had been confined to bed for some weeks, attention was directed to visitors and nurses. One of the latter, a probationer, was found, on enquiry, to be in the peeling stage, with little previous symptoms. Two others were reported in one house, one a child, and within a week, the mother, who was nursing her. All the rest were separated by considerable intervals of time, and apparently disconnected.

Three were between the ages of 1 and 5 years, 14 between 5 and 15 years, and 2 over 25 years; 11 were removed to the Sanatorium, and there were no fatalities.

DIPHTHERIA.—Following the somewhat widespread prevalence of this disease during the latter part of 1907, and practically throughout the next year, the number of notifications were reduced in 1909 to something more nearly approaching their normal aspect. With the disease still lingering to some extent in the neighbourhood the town could not expect wholly to escape, but the cases which did occur were mostly of mild type, and there were no fatalities. Only one attack was reported during the first five months of the year; then followed five notifications in June; two of these, however, were in one house. All four families were apparently quite disconnected both as to locality, schools, and milk supplies.

The next case occurred in September, but the child had been away, and no local history of infection was obtained. The following month was free from disease, but three more were affected in November, one (an adult) in the early part of the month, and two at the end, without apparently any association or connection. A number of contacts, both at school and at home, were examined by myself, and in several instances swabs were taken, but without result. In only one case were any unsanitary conditions found; the drainage here was somewhat defective, but it was all outdoors, and not, I think, a sufficient cause of disease. Three of the above patients were between the ages of 1 and 5 years, 8 between 5 and 15 years, and 1 between 15 and 25 years. Six were removed to hospital, while the remainder were treated at home.

Antitoxin is supplied by the Authority, and two negative swabs are obtained before disinfection is carried out.

TYPHOID FEVER.—Only one case was notified, and that early in the summer (June 8th); the patient was an adult, and no obvious cause for disease presented itself; a good recovery was made in the Sanatorium. The latter part of the year—the most usual typhoid season, was entirely free; probably the cool and somewhat wet summer and autumn was largely responsible for this result.

DIARRHŒA caused five fatalities in the district; four of these were registered in the town in September.

Two were in one house, in Albany Street, and a third in the immediate neighbourhood—all in children under 1 year of age. On enquiry, I found that there had been other cases of summer diarrhœa among the children in this locality, and a common complaint was made about the number of flies—so great as to be a nuisance. A general inspection of the back premises, which here impinge on the Lemon, did not, however, produce much result, though there are some stables at a little distance. These infants were all bottle fed; three of them were stated to be delicate from birth, one being a twin. This belongs to the preventible class of disease to a great extent, if proper care is taken to ensure that the milk is free from any pollution, by heating it to the simmering point for a few minutes, and also by use of bottles without tubes kept thoroughly clean.

Diarrhœa is essentially a seasonal affection, occurring in summer and early autumn, and though the above precautions are always advisable, they warrant special attention at that particular time of the year. There are now two parish nurses in the town, and some of their time might very well be devoted to the instruction of mothers on these points as occasion arises.

PTHISIS caused 9 fatalities, as compared with 13 in 1908, and 11 in 1907. One of these, however, took place in the County Asylum in a former resident.

In one instance the starting point of the disease was an attack of scarlatina (a young adult), while in another, influenza was said to be the preceding cause. There was one death of a child under 15 years; one between 15 and 25 years; three between 25 and 35 years; while the remainder were over the latter age.

Eight cases were notified under the Poor Laws, but three of these were in persons removed to the Union Infirmary from outside localities. Of the five patients in the town, two were young adults who had been affected for many years (6 in one case and 8 in the other); both, however, seem to be improving. Another, adult male age 34, had a history of seven years' illness, beginning with influenza; this man died during the year. The other two were elderly persons in whom the disease was chronic, and more or less stationary; all are fairly well looked after, and except in one case have separate bedrooms. These were all visited by myself at the time of notification, and subsequently kept under observation; cards, with a few simple directions, were left; spitting flasks, and disinfectant are supplied by the Authority.

Disinfection, with the Lingner apparatus, is offered by the Authority after death or removal, and in most cases carried out.

The Isolation Hospital is situated on the Totnes Road, about a mile from the town. Sixteen parishes are associated with the hospital combination, viz., Wolborough and Highweek (Newton Urban District), Abbotskerswell, Bishopsteignton, Bovey Tracey, Chudleigh, Cockington, Coffinswell and Dacombe, Coombe and Haccombe, Denbury and Torbryan, Hennock, Ipplepen, Kingskerswell, Kingsteignton, Ogwell, and Teigngrace.

In the typhoid wards, there is accommodation for four adults, allowing each 2,400 cubic feet, while the iron buildings contain 8 beds, with somewhat less space; this latter is used for scarlatina patients. The new diphtheria block, which was in use from last spring, is divided into four small wards, with accommodation for six adults, besides cots.

There is an administrative block, also a steam disinfecter, and mortuary.

During the past year 81 cases were treated, viz.:— 51 diphtheria, 45 of which were from the Rural, and 6 from the Urban District; 26 scarlatina (15 Rural, 11 Urban); and 4 typhoid fever (3 Rural, 1 Urban). There were 6 fatalities, 4 due to diphtheria, and 2 to typhoid fever; all these were assignable to the Rural Parishes, except one of the typhoid deaths, which took place in a visitor.

DISINFECTION, &c.—All notified cases of infectious disease are visited by myself and the Sanitary Inspector; printed cards of instructions are given and disinfectant supplied.

Houses are limewashed and disinfected by the Authority where necessary; clothes and bedding are dealt with by the steam disinfecter at the Hospital. The Lingner apparatus for the aërial disinfection of rooms is in use.

MIDWIVES' ACT.—There are at present four midwives on the books; three of these are registered by virtue of long practice previous to 1902. The other, who is also the Highweek Parish Nurse, is certified by examination. Visits of inspection have been paid; books and appliances were found satisfactorily kept.

SALE OF FOODS AND DRUGS ACT (including milk) is administered by the Police.

NOTIFICATION OF BIRTHS' ACT has not been adopted.

SANITARY CONDITIONS AND PROCEDURE.

WATER SUPPLY is that of Torquay, and is good and abundant. There are, however, some wells in the Rural part of the district, some of which were analysed during the past year; also two or three springs, which have their origin in the Wolborough Hill, are in use, and these seem to be generally of very fair quality.

Mile End, Highweek, still depends on wells, and the extension of the main in this direction has not yet been carried out.

LEAD.—I have had no suspected cases of poisoning by this agency; though the public supply is a soft upland surface water, the silica it contains in small amount seems sufficient to give pipes a protective coating.

SEWERAGE.—Water closets are general, and the great majority are now flushed. The trunk sewers are of masonry, and are brought to one outfall in the marshes, where there are settling tanks, the effluent from which discharges into tidal waters.

There are two or three short sewers in the village of Highweek, which irrigate meadow land; the outfalls are managed by the Authority.

The sewage at Mile End, from a row of 10 cottages and two villas, has been a frequent source of complaint; there are three settling tanks, the contents of which were formerly used for garden purposes, but the overflow reaches the road below, and nuisance arises if the pits are not constantly emptied. It is proposed to use an adjoining field for irrigation purposes, and negotiations with the owner are in progress.

The only earth closets which exist are in the rural parts of the district, where there is neither public water supply nor sewer accommodation; none of these have been converted to water closets under the Public Health Act, 1907, nor do I think it advisable; owners of any hand flushed closets in the town are called on to provide a proper flush as the systematic review of the House to House Inspection records of old property proceeds. Threequarters of this has now been brought up to date, and very few of such closets remain to be dealt with.

The only new sewerage laid was in connection with the Abbotsbury and Decoy building sites, and comprised altogether 466 feet (206 feet of 6-inch pipe and 260 feet of 16-inch).

SCAVENGING.—House refuse is removed three times a week in the more densely populated parts of the town, and twice in the outskirts. The depot for this is at the sewage works, but it is at a considerable distance from any houses, and I have had no complaints regarding it.

DAIRIES, COWSHEDS AND MILKSHOPS.—There are on the register 30 milk sellers; 20 are cow-keepers, while milk is brought in from 9 farms in the rural district, which are also under supervision. The number of cows kept in each varies from 2 to 48, with a total of 246.

The model regulations of 1899 under the Cowsheds, Dairies and Milkshops Order are in force; every purveyor is supplied with a copy printed on stout cards, which is hung up in the dairies. 26 have the public water supply (though one has a well, another a spring in addition), while four (in the rural part of the district) depend on wells or springs, all of which latter have been analysed, and found satisfactory. There is, on the whole, a steady improvement in the condition of the shippens, which are now, except three, paved with either brick or concrete; the regulation which enacts that all drain openings shall be outside the shippen, is being enforced by the Council. Limewashing, too, is now carried out very fairly, and I have found the dairies kept clean. There are 6 shippens in the town itself; that in Hopkins Lane has been re-constructed, and paved with concrete during the past year. A new dairy, outside the dwelling house, is to be provided in connection with shippens at Mile End. There are no cowsheds in which the animals are kept indoors all the year, so that Part II. of the regulations does not apply to this district. All these premises are systematically inspected by Mr. Judd and myself twice a year, and are also visited from time to time on other occasions.

Besides the above, one or two registered dairymen from the rural district make street deliveries.

No veterinary inspectors are employed, and, therefore, it is impossible to say if there are any tubercular cattle; the quality of the milk is tested from time to time by the police, who administer the Food and Drugs Act.

SLAUGHTERHOUSES.—There are one public and two private slaughterhouses in use; these are visited constantly, and I have no complaints to make with regard to them. There is no special meat inspector, but Mr. Judd is often present when slaughtering is going on.

The Council have under consideration a scheme for re-arranging certain areas adjoining the Market Buildings, and this includes the public slaughterhouse. There are two alternative propositions, one of which is to abolish the slaughterhouse altogether, while the other leaves it in situ. It is true that the number of animals killed in the public abattoir is comparatively inconsiderable, but the fact of its existence prevents the multiplication of private slaughterhouses in or near the town; these are always liable to cause a nuisance. It is a moot point whether supervision of the town's meat supply would be less effectual under a system of private urban slaughterhouses, because under present conditions much of it comes in from the rural districts (there are several slaughterhouses at Kingskerswell, besides others at Ogwell, Abbotskerswell and Kingsteignton), whose officers having a large area to cover, can only make visits of inspection at long intervals. On the other hand, such premises, if situated in the urban district, would be far more accessible, and, therefore, more constantly visited by the town officials, who have moreover more time to devote to it. Of course, if all animals, instead of only a small proportion of them, were killed in the public abattoir, the interests of the consumer would be most thoroughly safeguarded; but until such provision becomes universal, private slaughterhouses everywhere abolished, and meat inspectors appointed, the position will remain more or less in statu quo. At present only large urban communities can afford the expense of this procedure, and to deal with the matter effectually, national, and not merely local measures, are indicated.

HOUSING OF THE WORKING CLASSES.—During the past year Mr. Judd, the Sanitary Inspector, has made a series of house to house inspections of the Courts, and also of blocks of more recent—though not the newest—artizan dwellings. Details are given in full in his report. I hope, by the end of the present year, to be in a position to state that that another Court, now containing nine occupied cottages, has been finally closed.

Building has again been somewhat slack, and it seems that for the present the supply of houses has overtaken the demand; 43 dwellings, 25 of which were of the smaller type, were certified for occupation. No fresh building sites were opened up, but the Abbotsbury Estate, Forde Road, Deer Park, King Street, and Fairfield continue slowly to develop.

A point of considerable importance has arisen in this connection; in one or two instances slight deviations were made in construction from the plans as originally passed, and the Council have very properly insisted that these shall be adhered to in every detail. It is true that such modifications may seem immaterial in many instances, but if any unauthorised alterations are permitted, the question of where the line is to be drawn at once arises; this not only puts the official concerned in an equivocal position, but the Council at once lose their control—so necessary for the public interest. When it is fully realized that for any alteration a fresh plan must be put before the proper authority, and passed in the usual manner, no ground is left for misunderstandings. Moreover it is to be remembered that houses now built will endure for several generations, and that the interests not only of the immediate occupiers, but of posterity also, demand that the public body concerned shall have the most complete knowledge and control over them.

During the past year I have gone through Volumes 7 and 8 of the House to House Inspection records, and re-visited many of the houses. The original inspections were made between January and May, 1900, and the districts concerned included Union Street, Bank Street, Victoria Road, Back Lane, Albany Street, Gladstone Place, King's Cottages, Lemon Road, Albert Terrace, Lemon Place, Devon Square, (1—8), Osborne Street, St. John Street, Buckland View, Salisbury Road, G.W.R. Cottages, and St. John's Terrace—in all 330 houses. Since the date of the first inspection the drainage in connection with 175 houses has been wholly renewed, and partially so in the case of 55 more; that is to say that nearly 70 per cent. of the drains were put in order, and 153 closets provided with flush. All closets in the above localities are now flushed.

One house (in Mill Lane) was closed with the consent of the owner; five cases of overcrowding were abated—all in the Courts.

CEMETERY.—As the two burial grounds in the district—those in connection with the Wolborough and Highweek Parish Churches—threatened to speedily become inadequate for the needs of an increasing population—both have been more than once enlarged during late years—the Council decided to provide a public Cemetery. A plot of ground, nearly four and a half acres in area, has been purchased; this lies on the Totnes

Road, about a mile from the centre of the town, adjoining the Isolation Hospital, and is accessible by two main roads in different directions.

In my opinion the site is an excellent one, and a little subsoil drainage in one corner of the field, which is at some elevation, alone was necessary. A fairly compact bed of shilley soil underlies the whole area, and trial pits sunk at various points gave very favourable indications. The only dwellings in the vicinity are those of the Isolation Hospital, and two cottages also belonging to that Committee, and other building operations are not at all probable; moreover there is an adjoining field, containing about three and a half acres available for future extensions, though the present provision should suffice for the next generation.

Plans for laying out the grounds, together with a chapel, caretaker's lodge, and necessary offices, were prepared by the Surveyor and adopted by the Council; a Local Government Board Enquiry was held in the summer, and a loan for £3,500 granted in order to carry out the work, which has now commenced.

SCHOOL SANITATION.—The proposed new school in the Decoy District has not yet been commenced, and the present overtaxed condition of the schools in the Wolborough parish remains in statu quo. The St. Leonard's Infant School has been condemned by the Educational Authorities—to take effect at the end of the present year—and further provision in that district will also be necessary.

On the Highweek side, the recent enlargement of the Boys' School has provided ample accommodation for some time to come, but there are indications that the attendance at the Girls' School will soon reach the statutory limit.

All have the public water supply for drinking and flushing purposes.

The School Medical Officer examined about one-third of the children attending the elementary schools during the year, with the following results:—Of 639 (325 boys and 314 girls) examined, no less than 442 (196 boys and 246 girls) were pronounced defective—69 per cent.; it will be seen that the proportion of healthy children was much greater among the boys. "Diseased heads," which is largely a matter of personal cleanliness, was reported in 192 instances; out of this number 167 were credited to girls, but only 25 to boys, the long hair of the former being both more trouble to keep clean, and

also encouraging this condition. There was a good deal of difference between the various schools in this matter, and in one girls' school nearly 70 per cent. of the children were affected. Sixteen boys and 35 girls were described as being "unclean in body"; this seems comparatively few. Only 72 were mentioned as having diseased teeth; I had expected a far greater number from my experiences in the examination of one of the infant schools two years ago, when scarcely a sound set was to be found.

Of actual disease, enlarged tonsils was the most considerable item; no less than 149, or about 23 per cent. had this defect, while adenoids were present in 10. It is no wonder that a disease like diphtheria finds a ready soil for growth in such children. Ninety-four—rather under 15 per cent., suffered from defective vision, while just half that number were deficient in hearing; it is probable that many of the latter would be relieved by treatment of tonsillar conditions; 14 had disease of the ear.

The more serious constitutional affections were, of course, much less in evidence; thus only 8 were classed as "mentally defective"; 4 suffered from lung disease; 1 was tubercular; heart disease was present in 12 instances; while 11 were deformed. "Diseased glands" was reported in 39 cases.

Rickets, however, was entirely absent, and only 2 suffered from nervous disease.

Evidence of extreme poverty was small, and only 26 were insufficiently clothed; none were badly nourished.

The above is merely a brief extract of the report, which gives in tabular form these and a few other statistics in detail for each school; it seems so far as it goes that the great majority of defects are those which can be easily remedied by timely treatment, but at present there is no machinery to ensure that it shall be carried out. Tonsillar and adenoid affections, for instance, with a hospital on the spot, can be dealt with without difficulty, at the will of the parents. Defects of hearing, and many of those of vision, are in much the same position, though some of the latter require a specialist, and then difficulty and expense are incurred. Again, the seemingly increasing early decay of the teeth is a serious matter, because continuous attention is necessary, and until the cause is made clear—which seems at present a disputed point—the real remedy, prevention of disease, cannot be applied. Doubtless as time progresses, and

the public realise the conditions involved, systematic procedure will be adopted; this is the first detailed report on the subject, and merely seems to emphasize the fact that there is much which needs attention.

Mr. C. D. White, Surveyor, reports as follows:—

Report of the sanitary work carried out in connection with the sewers of the district, and of the plans for new houses and additions, for the year ending 31st December, 1909:—

New Sewers laid in connection with the building sites:—

GARSTON ROAD.

206ft. lineal 6in. socketted pipe.

DEER PARK.

260ft. lineal 16in. surface water drain.

Plans approved by Council in the year, 1909:—

4 stables.

1 coach house.

10 additions to houses.

17 medium houses.

18 smaller houses.

1 alterations, Bank Street for new Post Office.

1 Sunday School.

1 alterations and addition to Club.

1 new steeple to Church.

1 blacksmith's shop.

1 additions to Church.

1 S.W. drain, Decoy.

1 skating rink.

1 Garston Road sewer.

4 additions to shops.

1 greenhouse.

1 motor garage.

1 dairy.

1 Elementary School.

45 sets of plans in all.

Houses, &c., certified for in year, 1909:—

43 habitation certificates have been granted,

25 being for medium or artizan.

16 „ „ semi-detached houses.

1 „ „ shop.

1 „ „ Church.

COLERIDGE D. WHITE, Surveyor.

5th February, 1910.

Mr H. Judd, Sanitary Inspector, reports as follows :
To the Chairman and Members of the Newton Abbot
Urban District Council.

Gentlemen,—I beg to submit my ninth annual report on the work carried out in my department for the year ending December 31st, 1909:—

HOUSE TO HOUSE INSPECTION.

This year no less than 419 houses have been systematically inspected, when it was found necessary to serve notices for the abatement of nuisances in 97 cases. Already 75 per cent of those notices are complied with, and the remainder are being followed up. By a house to house inspection conditions inimical to health are discovered and removed, which might otherwise pass unnoticed until sickness occurs; or until a nuisance becomes sufficiently pronounced to justify a tenant in complaining. Considering the number of properties inspected the percentage of dirty houses met with was very low, which is much to the credit of the working men's wives of the town.

From the table given below it will be seen that the population of Hillman's Meadow is the same this year as in 1903, while there is a difference of one only between Beaumont Road and Hilton Road. In the last-mentioned streets a comparison cannot be made with the 1903 figures, for in that year the population (given in the Medical Officer's Report for 1903) of the whole of Bowden Hill was lumped together. As regards the other streets under review this is the first time they have been taken, the main object in doing so being to ascertain if overcrowding existed.

In the Courts considerable fluctuations have taken place; some have increased, others decreased; but on the whole there is an increase of 35, in spite of the fact that the number of occupied cottages is less. The most noticeable increase has occurred in Court 8, Wolborough Street, where the numbers have gone up 92.8 per cent., with only two additional cottages in occupation.

The number of persons per house varies from 3.9 to 4.6 in the first table; and 2.0 to 5.6 in the Courts, which might be considered satisfactory. Indeed, not a single case of overcrowding was met with in those houses included in Table I., and only 5 in the Courts, all of which have been abated. It is a point worthy of note that out of 419 cottages inspected, only 5 cases of overcrowding were discovered.

TABLE I.

	Population		Occupied Houses		Persons per House	
	1909	1903	1909	1903	1909	1903
Hillman's Meadow ...	379	379	96	90	3.94	4.2
Beaumont Road ...	202	...	51	...	3.96	...
Hilton Road ...	201	...	53	...	3.9	...
Tudor Road ...	250	...	59	...	4.2	...
The Grove ...	70	...	15	...	4.66	...

TABLE II.

The Courts.	Population				Persons per House	Occupied Houses	
	1909			1903			
	Adults	Under 15	Total	Total		1909	1903
Wolborough Street							
I.	20	22	42	36	3.8	11	10
II.	11	11	22	16	3.6	6	6
III.	25	15	40	44	5.0	8	9
IV.	9	9	18	17	4.5	4	3
V.	26	12	38	58	2.7	14	16
VI.	9	12	21	24	5.2	4	5
VII.	16	11	27	21	4.5	6	5
VIII.	33	48	81	42	5.4	15	14
X.	19	13	32	35	3.5	9	11
XI.	35	26	61	62	4.06	15	16
Total ...	203	179	382	355	4.2	92	95
East Street							
II.	19	6	25	19	2.77	9	6
III.	2	...	2	8	2.0	1	1
IV.	8	9	17	25	5.6	3	6
V.	4	6	10	8	5.0	2	2
VI.	9	13	22	14	5.5	4	3
VIII.	10	9	19	15	3.8	5	5
IX.	8	2	10	6	2.5	4	4
X.	16	5	21	21	3.0	7	6
XI.*	...	...	...	6	...	...	1
XII.	2	3	5	7	5.0	1	3
Total ...	78	53	131	129	3.9	36	37
Highweek Street							
I.	25	22	47	36	4.2	11	10
II.	15	11	26	31	4.3	6	7
Total ...	40	33	73	67	4.2	17	17
Grand Total	321	265	586	551	4.1	145	149

* Since 1903 Court XI., East Street, has been closed.

WATER SUPPLY.

Ten samples of well or spring water were submitted to the Medical Officer for analysis. He reported 7 as good, one fair, and two bad. One of the latter belonged to a house which had two wells, the water in one being satisfactory. The supply from the polluted well has been discontinued. In the other case steps were taken to prevent pollution, with the result that a subsequent analysis showed the water to be good.

DAIRIES, COWSHEDS, AND MILKSHOPS.

The number of persons registered as cowkeepers or milk purveyors is 30, as in 1908. Each dairy within the district has been inspected at least twice—some have received as many as half a dozen visits—the number of inspections depending chiefly on the habits of the dairyman.

Milk sellers are no exception to the general rule of men; some pay every attention to cleanliness, while others have inclinations the other way, and are only kept up to their responsibilities by regular inspection.

Seeing that milk is a general article of food, and forms the staple diet of infants and invalids, it is of vital importance that the consumer should receive it in a pure state. And the purity, or otherwise, of a milk supply depends largely on the dairyman himself. The benefit that might be derived from healthy cows, good and well planned byres, and a pure water supply, is defeated unless the udders, hands, and vessels are clean, and the milk guarded against contamination during storage and distribution.

Further legislation is badly needed for the regulation of the milk trade, and, in my opinion, no reform will be satisfactory until the present system of registration is superseded by a system of licensing; the license to be granted for a limited period, say 12 months, and renewed on a satisfactory report.

Several improvements have been effected in the lighting, paving, and drainage of our cowsheds during this year, and the regulations as to limewashing and cleansing enforced.

SLAUGHTER HOUSES.

There are one public and two private slaughterhouses in the district. These are constantly under supervision for the detection of diseased meat, and to ensure cleanliness. The carcass of a sheep, and 3 diseased livers were seized and destroyed.

COMMON LODGING HOUSES.

The two common lodging houses in the town are periodically inspected, and the usual limewashing and cleaning enforced. Notices were served for repairs at each house, which have been carried out.

FACTORIES AND WORKSHOPS.

The number of workshops on the register this year is 90; last year 87. These have all been inspected. It was found necessary to serve 21 notices with respect to limewashing, overcrowding, ventilation, and other matters. All the notices are complied with. Five communications were received from the Factory Inspector with reference to matters needing attention in workshops, and these have been attended to.

The following is a list of workshops on the register :

Bootmakers	...	2	Marble Masons	...	3
Bakers	...	16	Milliners	...	4
Basket Makers	...	1	Painters	...	1
Brush Makers	...	1	Plumbers	...	1
Builders and			Refreshment Rooms		1
Carpenters	...	6	Saddlers and Harness		
Cabinet Makers	...	1	Makers	...	2
Coach Builders	...	2	Smiths	...	5
Coopers	...	1	Tailors	...	10
Cycle Shops	...	2	Tin Smiths	...	2
Dressmakers	...	19	Upholsterers	...	1
Dyers	...	1	Umbrella and Trunk		
Laundries	...	7	Makers	...	1

DISINFECTION.

The following is a list of rooms fumigated after infectious illness:—Scarlatina, 17; diphtheria, 11; typhoid, 1; phthisis, 3 — a great improvement on last year, when the number was 127. Nineteen lots of bedding and other articles were removed to the Hospital for disinfection.

NEW BUILDINGS.

The drains and sanitary arrangements of 48 new buildings have been passed and certified this year, as against 42 in 1908.

SUMMARY OF SANITARY IMPROVEMENTS.

Drains relaid or repaired	...	...	67
Soil and vent pipes fixed	...	...	15
Drains cleared	...	...	15
Cesspools abolished	...	...	1
New wash-down closet pans fixed	...	...	19
Closets flushed	...	...	7
Closet flush cisterns renewed	...	...	4
Closet flush cisterns repaired	...	...	17
Earth closets built	...	...	5
Courtyards paved	...	...	8
Courtyards repaired	...	...	16
Stables drained	...	...	4
Houses cleaned	...	...	12
Houses repaired	...	...	32
Town water laid on to premises	...	...	3
Taps on mains provided	...	...	9
Pumps repaired	...	...	2
Overcrowding abated	...	...	5
Other nuisances removed	...	...	33
Letters written	...	...	305
Informal notices served	...	...	159
Already complied with	...	.....	128

I have the honour to be, Gentlemen,

Your obedient servant,

H. JUDD, Sanitary Inspector.

III.—DAWLISH URBAN.

PHYSICAL CHARACTERS. The town is situated at the bottom and on the slopes of a picturesque ravine running from Haldon in an easterly direction to the sea, and is in a remarkable manner isolated by the surrounding hills. The central part of the town is occupied by extensive gardens, adding considerably to its attractions, through which runs the stream known as Dawlish Water. The hills vary from cliffs overhanging the sea, with a height of 150—200 feet, up to 800 feet on the summit of Haldon. The district, which has a total area of 1,500 acres, includes the residential village of Holcombe, pleasantly situated on the cliffs, about $1\frac{1}{2}$ miles to the south. The geological formation is red breccia or sandstone.

The population at the census of 1901 was 4,003, which, for statistical purposes, I have left unchanged; there were at that time 892 inhabited houses, with an average number of 4.5 persons per house.

OCCUPATION.—There are no special industries with the exception of a brewery, but employment is largely provided in catering for the numerous and increasing visitors who frequent the town: with these sea bathing and boating are favourite amusements, and for both Dawlish affords excellent and safe facilities; there are, therefore, many lodging houses, besides several hotels of good standing. On the encircling hills are many villa residences; others are in process of building, and the neighbourhood is a most attractive one, both in scenery and climate.

VITAL STATISTICS.—The number of deaths registered in the district in 1909 was 62; four of these were attributable to the upsetting of a boat which was crossing from Exmouth to Teignmouth. Neither the vessel nor the passengers had any connection with Dawlish, except that the bodies of those who were drowned were recovered at sea two miles off the town; I have therefore, excluded them. On the other hand four deaths in the Union House, and two in the County Asylum took place among former residents, and are added. This gives a net total of 64, of whom 26 were in males and 38 in females: the resulting death rate is 16.0 per 1,000, which is a small fraction above that of the previous year (15.7), but a point below the decennial average.

(17.0.) There were five fatalities among visitors; if these are omitted the rate is reduced to 14.7. The deaths in the four quarters of the year numbered 21, 10, 18, and 15, giving rates per 1,000 per annum of 21.0, 10.0, 18.0, and 15.0 respectively. Thus the first quarter shewed, as it often does, the highest mortality, while March (12 deaths), September (9), and December (7), were the most fatal months. On the other hand, May and June were only responsible for 2 deaths apiece.

CHIEF CAUSES OF FATALITY.

7 chief zymotic diseases	...	9 deaths	
Constitutional	„	12	„ (4 cancer; 5 phthisis)
Diseases of the nervous system	7	„	(5 apoplexy)
„ „ respiratory	„	5	„
„ „ circulatory	„	6	„
„ „ urinary	„	3	„
„ „ digestive	„	5	„
Premature birth	...	1	„
Old age	...	10	„
Violence	...	6	„ (5 accident; 1 suicide)

AGE INCIDENCE.

Under the age of 1 year	there were	8 deaths.
Between 1 and 5 years	„ „	8 „
„ 5 and 15 years	„ „	1 „
„ 15 and 25 years	„ „	5 „
„ 25 and 65 years	„ „	17 „
Over 65 years	„ „	25 „

Thus the percentage of deaths under 1 year to the total was 12.5, and of those over 65 years, 39.1. Both these figures are an advance on those of the previous year, the former markedly so—the latter to a slight extent. The average age at death was 45.3, as compared with 43.8 in 1908, and 46.1 in 1907.

Five deaths took place in the Cottage Hospital during the year, all of which were among residents.

The infantile mortality or deaths under 1 year to 1,000 births was 107—a great reduction in comparison with the high figures of the two preceding years, and also with the decennial average of 153.

The causes of this mortality were:—Whooping cough, 3 deaths; diarrhœa, 2; pneumonia, 1; premature birth, 1; and accident, 1.

Investigation into these deaths shewed that out of the total of 8, one was a nurse child, whose mother did not belong to Dawlish. Six belonged to the working classes, all of whom were earning under £1 a week or in

COMPARATIVE TABLE.

DEATHS FROM	1909	Average of years 1899 1908	1908	1907	1906	1905	1904
Small Pox ... ..	...	...	...	...	...	...	...
Measles ... ..	...	1·8	...	...	...	10	...
Scarlatina ... ..	...	2	...	...	...	...	...
Whooping Cough	6	1·2	1	1	...	...	2
Diphtheria	1	2	...	...	1	1	...
Continued Fevers (Typhoid, &c.) ... ..	...	3	1	...	...	1	...
Diarrhœa	2	1·1	1	1	1	...	...
7 CHIEF ZYMOTICS :	9	4·8	3	2	2	12	2
Phthisis... ..	5	5·5	4	2	3	7	7
Other Tubercular Diseases	1	1·5	...	1	1	1	...
Bronchitis, Pneumonia, Pleurisy	4	9·5	7	9	5	16	7
Heart Diseases... ..	5	10	6	9	12	11	14
Cancer	4	4·5	5	5	2	5	6
Violence	6	2	4	1	...	2	4
All other Diseases	30	30	34	27	31	27	24
Total deaths	64	68	63	56	56	81	64
Estimated Population	4000	4006	4000	4000	4000	4000	4000
General Death Rate	16 0	17·0	15·7	14·0	14·0	20·2	16·0
„ excluding Visitors	14·7	15·2	14·2	13·5	11·5	19·0	13·2
Zymotic Death Rate	2 2	1·2	·75	·50	·50	3·0	·50
Total Births	75	74	83	66	77	75	76
Birth Rate	18·7	18·5	20·7	16·5	19·2	18·7	19·0
Deaths under 1 year	8	11	14	13	4	15	8
„ between 1 and 5 years	8	4	2	4	2	8	1
„ over 65 years	25	28	24	27	26	34	31
Deaths under 1 yr. to 1000 births	107	153	169	197	52	200	105
Deaths in Union House belonging to District	4	2	3	1	4	3	1
Death in County Asylum belonging to District	2	...	...	...	...	1	...
Average Age at Death... ..	45·3	...	43·8	46·1	54·6	46·3	...

uncertain employment. Four were either wholly or partially brought up by hand, including both those who died from diarrhœa. Five were stated to have been delicate from birth, including the three whose deaths were due to whooping cough, and one or other parent had weak constitution in two. Seven were living in the older houses, but sanitation was fair in all but one case, and in that there was nothing very definitely wrong. The prevalence of whooping cough, which was responsible for three of these fatalities directly and another indirectly, was the cause of half this mortality.

The births of 34 boys and 41 girls give an annual rate of 18.7 per 1,000, which is just two points below that of the preceding year, though slightly in advance of the decennial average. The births during the four quarters of the year numbered 18, 16, 27, and 14, giving rates per 1,000 per annum of 18.0, 16.0, 27.0, and 14.0 respectively.

The natural increase, or excess of births over deaths, reckoning the mortality in the Union House and County Asylum, was 11, or 2.7 per 1,000, as compared with 20 in 1908, and 10 in 1907.

In comparison with previous years, these figures may, on the whole, be considered as fairly satisfactory. The general death rate is below the mean, though a little above that of the last three years, and is somewhat discounted by the large number of deaths due to violence; then again the zymotic rate, though large in itself, is almost entirely due to a winter epidemic of whooping cough, and to two fatalities from diarrhœa—all in children under one year. Under these circumstances the infantile mortality—though just over 100—is satisfactory, and moreover is less by one-third when compared with that for the preceding ten years. As in the other two districts dealt with in this report, the birth rate shews a tendency to remain stationary.

Turning to other causes of mortality, tubercular diseases represent a rate of 1.5 per 1,000, as compared with 1.0 in 1908; while the mean for the years 1899—1908 was 1.7. A slight decrease is registered in cancer, both as compared with the preceding year, and the decennial mean. Respiratory diseases, in spite of the prevalence of whooping cough, were only responsible for about half the normal mortality, while heart affections occupied much the same position.

On the other hand, deaths from violence were unusually numerous, but 3 out of 6 were the result of a disastrous fire; while two others took place in visitors, one on the railway and one due to suicide.

ZYMOTIC DISEASE.—From the seven ordinary zymotic diseases there were 9 deaths—6 from whooping cough, 2 from diarrhœa, and 1 from diphtheria; this gives an annual rate of 2.2 per 1,000, as compared with .75 in 1908, and a decennial mean of 1.2.

There was only one case of notifiable infectious disease—a diphtheritic attack in a young adult.

WHOOPING COUGH.—This disease was prevalent during the early spring months, and at one time considerably affected the attendance at the infant

school; this was not closed, but children under 5 were excluded for a time just before the Easter holiday. Six deaths resulted in all—four in March, one in April, and one as late as August. The senior schools were, as usual, almost entirely free.

DIPHTHERIA.—Only one case was reported in a young girl—a domestic servant. This was associated with sanitary defects in the house concerned, and was apparently quite disconnected; unfortunately the result was fatal.

TYPHOID FEVER AND SCARLATINA were entirely absent, and this small incidence of infectious disease shews the healthy condition of the district.

ISOLATION HOSPITAL & DISINFECTION.—An agreement has been entered into with the Exeter City Council, under which patients will in future be removed, when advisable, to the Sanatorium at Pinhoe; this is some 12 miles distant, along a practically level road. In a small district like Dawlish, the provision of isolation accommodation is most costly, both actually and relatively to the number of beds provided, and such an arrangement as the above should suffice for the needs of the town. In time of epidemic the expense would, of course, be considerable, but in other years establishment charges, and the general upkeep of a permanent building will be entirely saved; experience is, however, the best test.

Houses are disinfected and limewashed where necessary, and rooms are fumigated with the Lingner apparatus for aërial disinfection.

PHTHISIS.—Five deaths were registered, one of which took place in the County Asylum in a former resident. One was between 15 and 25 years, and the others between 25 and 65.

No cases have been reported, either under the Poor Law Act or by voluntary notification.

MIDWIVES' ACT.—There are only two Midwives on the register, both of which come under the section which allows registration of suitable persons who had been in practice prior to 1902.

Visits of inspection are paid from time to time, and I have found appliances clean and case books in order.

SALE OF FOODS AND DRUGS ACT is administered by the Police.

NOTIFICATION OF BIRTHS' ACT has not been adopted.

SANITARY CONDITIONS AND PROCEDURE.

WATER SUPPLY is derived from two springs on Haldon, the flow from which, after a short course—in one case of threequarters of a mile and in the other about a quarter of a mile—is collected in a small impounding reservoir with a sand filter, and is thence piped to the town, a distance of about five miles. The gathering ground, which is about 350 acres in area, and lies from 500 to 600 feet above sea level, is uncultivated, and of moorland type, and entirely free from houses or any source of animal pollution. From this point the water is conveyed by a 5-inch main to a home reservoir, containing 500,000 gallons, on the Burrows, a hill just outside the town; this reservoir supplies the houses on high levels, while the others draw direct from the main. The service pipes are continued to Holcombe, which is thus supplied from the same source; the intake reservoir and the stream immediately above are cleaned from time to time by the Surveyor.

After the scraping out of the mains, which was completed during the year, it has been possible to obtain a better supply, though a somewhat wet summer also contributed to this result; it was nevertheless found necessary to turn off the lower level supplies on a few occasions to allow the reservoir to fill, and a constant service was hardly maintained throughout the year.

The Surveyor has prepared plans for building an impounding dam at the Thorns, by which the winter flow of the two springs would be stored to the extent of 10,000,000—15,000,000 gallons; the whole town could then be supplied from the Burrows reservoir.

Trial pits have been sunk, and various other preliminaries, such as the gauging of the flow, taken in hand; the most important of these, however, is that connected with the ownership of the gathering ground.

At present the Council are in possession of a small portion of land (about 3 acres) immediately surrounding the filter, and including little more than a hundred yards of the course of the stream; there is no control over the springs which are its source. By the advice of the Surveyor and myself, it was agreed that the time had now come—especially with a large storage scheme in contemplation—for the town to purchase the whole of the gathering ground, including the rights over the two springs, which are the main source of the water. This mostly consists of heather and rough undergrowth, but there is a small fir

plantation on the south-east corner. The source of a water supply—so important to the inhabitants—should, in my opinion, be always under their control, and especially so where surface springs, which depend on the rainfall over a considerable surrounding area, are concerned. With this end in view, negotiations with the owner of the property have been entered on, and when this point is favourably settled, the enquiry stage will be reached.

LEAD.—Though the water is soft, and containing little lime salts in solution, I have never had any evidence that it has any solvent action on lead.

SEWERAGE.—Water closets are general, and the great majority are flushed; the sewers are all brought to one main outfall, which is taken out to sea at a distance of threequarters of a mile north of the station; the outlet is below low water level. This outfall sewer was in good working order during the past year.

Holcombe has a sewer which also discharges into the sea; the water closets here are now all flushed. The sewer was extended during the past year from the Castle Inn to Meadow-Leigh.

There are a few earth closets in the rural parts of the district, where there is no public water supply or sewer accommodation; none of these have been converted into water closets under the Public Health Act of 1907, and I do not know of any in which this would be desirable. As the house to house inspection of the town proceeds handflushed closets will be dealt with, and the owners called on to provide proper flush.

Work on the new sewerage system commenced in the autumn, and three parts of the alterations and reconstructions have now been carried out. The old sewers in Church Street, Barton Crescent, Barton Road, Park Road, Stockton Hill, Queen Street, Marine Parade, High Street, and Teignmouth Hill have been replaced, and the system extended to Weech. Only those in Exeter Road, East Cliff, Strand Hill, Plantation Terrace and back of Brookdale remain to be dealt with, and the work will, it is expected, be completed before the summer.

This scheme brings the sewerage of the town up to date, and relieves one or two of the trunk sewers, notably that in Brunswick Place, which previously had more than their due proportion of drainage to deal with. Incidentally a leat was found to be overflowing into the Church Street sewer by means of a six-inch drain

running nearly full; as this point is near the head of the system, a considerable tax on the capacity of the sewers has now been removed.

SCAVENGING.—House refuse is removed daily in the central portion of the town; twice or thrice weekly in different parts of the outskirts, and weekly at Holcombe. The refuse is at present disposed of by contract to farmers for manurial purposes.

SLAUGHTERHOUSES, of which there are six, are regularly inspected by the Surveyor and myself. Four are in the town, and two outside, but one of the latter is little used. They are, as a rule, kept in good order, but the paving of one of those in the town wants attention. There is no meat inspector, and, as in the other two districts, it is not possible to make visits in private slaughterhouses at all times when slaughtering is going on.

DAIRIES, COWSHEDS, AND MILKSHOPS.—The Local Government Board Model Bye-Laws of 1899, under the order, are in force. These have been printed on stout cards, and each milk seller has a copy. There are in the district ten registered dairymen, five of whom are cowkeepers. The remainder, except one, get their milk from farms in the Newton Rural District; in two of the latter improvements have been effected during the past year. The exception is in the St. Thomas Rural District. Eight have the town water supply, while one depends on a spring, and another on a well. I visit these regularly twice a year, besides other occasional inspections by the Surveyor. I have always found the dairies kept clean, and the shippens limewashed, though notice to do this was served in one instance.

There is no means of ascertaining if any cattle are tubercular, and the police take samples of milk for analysis from time to time.

HOUSING OF THE WORKING CLASSES.—No cases of overcrowding have come under notice, and no houses have been reported as unfit for occupation during the past year.

I have continued the house to house inspection begun in 1908; this year Brook Street and Manor Row were visited, with the following results:—Of 90 houses inspected, 88 were of the cottage type; two were empty, and the remaining 86 were tenanted by 206 adults, and 81 children, or about 3.3 persons per house. It is perhaps remarkable that there were no children in 54 dwellings—considerably more than half.

4 contained 2 rooms				} Not including back kitchens or sculleries.
21	"	3	"	
30	"	4	"	
21	"	5	"	
8	"	6	"	
1	"	7	"	
2	"	8	"	
1	"	10	"	

This made a total of 377 rooms, and gives less than one person per room (.78) in those inhabited. In no case was there any overcrowding, and the largest number in one dwelling was 8 persons (6 children) in a 5-roomed house; also 8 persons (4 children) in a 6-roomed house. There were 5 who cater for lodgers.

There are several courts shared by two or more houses, and in some instances the paving wanted attention; in one case the yard common to 6 cottages has been since paved with concrete; others are under notice. In 13 there was no back space at all, but only four could be described as "back to back." Many of the back yards were very small, but even this condition means a certain amount of through ventilation.

I found nearly all the houses dry, with good slate roofs, and shuting and spoutings in fairly good order. All have the public water supply for drinking and sanitary purposes. Out of 64 closets, 55 were provided with flush, but several of these were of the old long hopper type, with the inefficient spiral flush. The water has since been connected with three out of the nine hand-flushed closets, and another closet has been provided, where four houses used the same.

Very few nuisances attributable to tenants were found, but poultry keeping was abolished, by notice, in two instances.

The owners have been called on to remedy defects, and when these have been complied with, this inspection will be continued.

Two new building sites are in process of development; both are to be taken up by detached residential villas. The Luscombe site is to the south of the town, and will constitute a small suburb; while on the north aspect plans for three villas on the Stockton Hill have been passed. Both these areas are in most attractive positions, in sight of the sea, and backed by the Haldon hills; and houses of this type will contribute considerably to the progress of the town.

Altogether seven houses are being built.

SCHOOL SANITATION.—There are three public elementary schools in the town: the girls and infants are practically under the same roof, but are separate departments; while the boys' school is at a short distance. All have the public water supply for drinking and sanitary purposes, and I have found closets, etc., in good working order on my visits.

The School Medical Officer has during the year inspected about one quarter of the children, and out of 177 examined, 132, or nearly 75 per cent., exhibited some defect. As elsewhere "diseased heads" among the girls was the largest item—in this case 55 out of 99, or rather more than 55 per cent.—while only 4 boys (out of 78) were thus classed. On the other hand only 6 boys, and 3 girls were described as "unclean of body," which seems creditable. Fourteen had diseased teeth, while enlarged tonsils (20), adenoids (2), and diseased glands (5) represented another group of defects.

Abnormalities of vision were somewhat large, and no less than 37 girls and 14 boys—51 in all—were thus affected; 8 had defective hearing; and 1 disease of the ear.

The more serious constitutional diseases were very little in evidence: thus none were described as mentally deficient, or suffered from rickets, or tubercular affections; 1 had heart complaint; 2 nervous disease; and 1 was deformed. This group gives, therefore, a much more favourable result.

Evidence of extreme poverty was small; none were found badly nourished, and only 4 had defective clothing. On the whole this inspection shews that most of the defects are those which are amenable to suitable treatment.

WORKSHOPS, Etc.—I have visited the following 54 workshops, and found them generally in good order. Paving of floors, in bakehouses particularly, has been receiving attention; three of these had the old type of rubble stone pitching, which is impossible to cleanse efficiently. Two were, however, paved with concrete during the year, and the third is under notice; in two instances, verbal notice to limewash bakehouses was immediately complied with. One or two laundries also want attention in respect of paving.

One bakehouse may be termed as "underground," but the occupier is licensed by the Council, and these premises are quite satisfactory.

In all instances, the public water supply is in use, and all but two (both outside the town) are provided with properly flushed water closets.

There is only one outworker on the list.

Bakers	...	...	8	Printers	...	...	2
Bootmaker	...	...	1	Plumbers	...	...	2
Builders	...	...	7	Saw Mills	...	...	1
Carriage Works	...	...	1	Smiths	...	...	1
Dressmakers & Milliners	...	...	9	Tailors	...	...	4
Joiners	...	...	1	Wheelwrights	...	...	1
Laundries	...	...	16				

Mr. S. F. C. CHURCHWARD, Surveyor and Sanitary Inspector, reports as follows:—

Summary of sanitary work performed in the district for the year ending December 31st, 1909.

Houses inspected	...	...	...	...	71
Dairies and cowsheds inspected	...	...	...	...	10
Slaughterhouses inspected	...	...	...	...	6
Intimation notices served	...	...	...	...	9
House drains, new connections to sewers	...	...	...	...	14
Houses redrained	...	...	...	...	14
Houses intercepted	...	...	...	...	14
Total number of water and smoke tests	...	...	...	...	51
Total number feet of drain, water & smoke tested	...	...	...	...	1,329
Total number of visits	...	...	...	...	317
Sanitary certificates given	...	...	...	...	4
Plans passed for new houses	...	...	...	...	7

METEOROLOGICAL STATION.

The station, which is maintained by the Council, is under supervision of the Engineer and Surveyor, and is situated at the entrance to the Lawn, Lat. 50.35 N., Long. 3.27 W. All observations are taken at 6 p.m. local time, and it contains the following instruments:—

1. Stevenson's screen, containing dry and wet bulb, maximum and minimum thermometers. The bulbs of the hygrometers are placed four feet above the grass, and are of standard make.
2. Self-recording Aneroid barometer.
3. Self-recording vacuum thermometers, bright & black.

4. Grass minimum thermometer, which is placed on grass, about one inch above ground.
5. Rain gauge—Casella's—diameter of gauge 5 inches; height above sea-level 17.59 feet, and fixed about 12 inches above ground.
6. Sunshine recorder, a "Stokes Campbell," fixed on parapet of Royal Hotel; records are taken daily.

DURATION OF BRIGHT SUNSHINE.

In hours and tenths of an hour.

1909.	Total	Daily Mean	Greatest Amount in one day	Date	Sunless Days
January	61.0	2.0	6.0	20th	13
February	59.2	2.1	7.2	12th	15
March	58.2	1.9	8.7	25th	13
April	119.5	4.0	10.5	10th	9
May	271.4	8.7	13.5	2nd	—
June	143.5	4.8	12.7	8th	5
July	192.5	6.2	12.3	11th	3
August	237.6	7.6	12.7	11th	2
September	148.4	4.9	12.0	5th	3
October	76.8	2.5	9.0	30th	17
November	61.5	2.1	7.4	9th	12
December	35.7	1.2	6.0	21st	17
Year	1465.3	4.0	13.5	May 2nd	109

SHADE TEMPERATURES.

1908.	Maximum Mean	Minimum Mean	Max & Min Mean	Range Mean	Highest	Date	Lowest	Date
January ...	49.9	33.2	41.5	16.7	64	4th	20	26th
February ...	52.8	30.2	41.5	22.6	65	5th	23	23rd
March ...	49.1	32.5	40.8	16.6	53	2nd	21	20th
April ...	60.4	38.6	49.5	21.8	68	11th	30	26th
May ...	63.2	46.0	54.6	17.2	72	12th	34	5th
June ...	69.7	43.6	56.6	26.1	79	15th	39	15th
July ...	68.9	44.5	56.7	24.4	77	17th	45	26th
August ...	70.7	44.7	57.7	26.0	79	11th	43	19th
September	60.4	41.3	50.8	19.1	68	6th	43	9th
October ...	62.2	41.4	51.8	20.8	66	21st	30	30th
November	57.8	41.1	49.4	16.7	52	4th	24	18th
December	55.2	36.8	46.0	18.4	53	2nd	21	21st
	60.0	39.5	49.7	20.5	79	Aug. 11	20	Jan. 26

BAROMETRIC PRESSURE.

1909						Mean of Month	Highest Reading	Lowest Reading	Extreme Range of Pressure
January	...	...	...	...	...	30.07	30.58	29.29	1.29
February	...	...	...	...	...	30.24	30.39	29.28	1.11
March	...	...	...	...	...	29.37	29.66	28.66	1.00
April	...	...	...	...	...	29.67	30.15	29.20	0.95
May	...	...	...	...	...	29.43	30.13	29.21	0.92
June	...	...	...	...	...	29.69	30.26	29.02	1.24
July	...	...	...	...	...	29.64	30.08	29.30	0.78
August	...	...	...	...	...	22.43	30.04	29.04	1.00
September	...	...	...	...	...	29.25	30.10	29.30	0.80
October	...	...	...	...	...	29.03	29.65	28.80	0.85
November	...	...	...	...	...	29.30	29.95	28.78	1.17
December	...	...	...	...	...	28.74	29.80	28.08	1.72
Year	...	...	...	...	...	29.49	30.58	28.08	2.50

RAINFALL.

1909				Total Amount	Wet Days	Mean Wet Day Rainfall	Greatest fall in 24 hours	Date
January	...	...	...	1.59	13	0.12	0.39	12th
February	...	...	...	0.47	4	0.11	0.35	10th
March	...	...	...	5.04	21	0.24	1.56	8th
April	...	...	...	1.91	11	0.17	0.62	22nd
May	...	...	...	1.28	6	0.21	0.56	25th
June	...	...	...	3.89	14	0.27	1.75	4th
July	...	...	...	2.13	6	0.35	1.32	26th
August	...	...	...	1.66	7	0.23	0.61	17th
September	...	...	...	1.68	11	0.15	0.76	11th
October	...	...	...	5.67	25	0.22	0.76	26th
November	...	...	...	0.73	8	0.09	0.20	22nd
December	...	...	...	5.30	20	0.26	2.00	22nd
				31.35	146	0.20	2.00	Dec. 22nd

WIND DIRECTIONS.—North, 5 days; N.E., 92; East, 20; S.E., 81; South, 2; S.W., 75; West, 1; N.W., 89.

Highest Shade Temperature	...	...	79
Lowest Shade Temperature	...	...	20
Mean Maximum	...	...	60.0
Mean Minimum	...	...	39.5
Mean Temperature	...	...	49.7
Mean Range of Temperature	...	...	20.5
Total Rainfall	...	...	31.35
Wet Days	...	...	146

S. F. C. CHURCHWARD, Engineer & Surveyor,

Dawlish Urban District Council.

February 21st, 1910.

ANALYSES OF WATERS—1909.

No.	Source.	Date of collection of Sample.	Physical characters.	Free Ammonia	Albumenoid Ammonia	Nitrogen from Acids	Chlorine	Total Solids	Oxygen Absorbed	Remarks.
				Parts per 1,000,000			grains per gallon			
1	Newton Rural Bickington, spring, Bone Mills.	Dec. 4	good	·04	·15	...	3·3	22·4	large	Contains rather much vegetable matter
2	Cockington, new supply, Shiphay Schl.	Aug. 31	good	nil	·035	2·5	2·1	35·0	moderate	Very good spring waters: though a little hard
3	Cockington, public pump, Edginswell.	Jan. 8	good	nil	·02	3·3	2·1	30·8	small	
4	Coombe, Higher public spring.	Aug. 14	good	nil	·065	1·2	2·1	28·0	moderate	
5	Dawlish West, public supply.	June 19	good	nil	·055	2·5	2·1	14·0	moderate	Displays its usual good character
6	Dawlish, West, well, Easdon Cottage.	Oct. 27	a few suspended particles	·01	·035	...	4·9	44·8	small	A pure, though hard, well water
7	Islington, well, S. Knighton.	Mar. 12	yellow color, some suspended matter	·04	·30	..	5·6	49·0	large	Hardly fit for drinking purposes
8	Islington, spring, below village,	May 5	good	nil	·03	..	1·75	14·0	small	A very pure spring water
9	Ipplepen, well at Miss Gribble's.	May 22	much suspended matter	·01	·18	...	8·0	59·5	moderate	Unfit for drinking: are now disused
10	Ipplepen, well at Mr. Horswell's.	June 19	good	nil	·14	...	7·3	49·0	moderate	
11	Lustleigh, spring, Lower Sanduck.	Jan. 12	good	nil	·08	·82	1·7	8·4	moderate	A spring of very fair quality
12	Lustleigh, well, Caseley.	Feb. 13	good	·005	·10	6·0	2·1	10·4	moderate	A slight excess of vegetable matter
13	Manaton, well, Freeland.	Oct. 29	fair	·02	·10	...	3·5	14·0	moderate	Not quite so pure as a granite water should be
14	Newton Urban. Well, Forges Cross	Feb. 5	yellow color, some suspended particles	·02	·14	4·5	9·8	42·0	considerable	Shows considerable signs of pollution
15	Well, Mainbow	Jan. 23	good	nil	·07	5·5	4·9	22·0	small	A very fair well water
16	Mile End, Middle Well	Feb. 20	good	·015	·065	...	7·0	61·6	moderate	A very hard water: otherwise moderate
17	Lindens, Well in Yard	May. 10	good	·05	·09	...	7·0	49·0	considerable	Both these are hard waters with some vegetable matter
18	Lindens, Well in Garden	Mar. 29	good	·01	·09	...	3·5	49·0	small	
19	Well, Forges Cross	Sept 3	good	·02	·05	...	7·7	49·0	moderate	Much improved since the former analysis

